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COMMERCIAL CAR JOURNAL

THE MAGAZINE FOR FLEET OPERATORS
FEBRUARY 1946



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More-Load design is a money-saving Reo feature. It provides more load space on shorter wheelbase with balanced weight distribution, gives shorter turning radius and greater accessibility. In every detail and every dimension Reo is *all truck*—from the powerful, precision-built Gold Crown engines, with crankshafts hardened by special process, to the massive cold-riveted frame structures and the dual primary brakes which utilize braking areas more effectively. Get the facts and you'll standardize on Reo equipment, which is now being delivered through a nation-wide sales and service organization of factory-operated branches, distributors and dealers. REO MOTORS, INC., Lansing 20, Michigan.

1904 • AMERICA'S TOUGHEST TRUCK • 1946



Things are moving...the Job-Rated way

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WITH GUEST STARS, THURSDAYS C.B.S., 9 P.M., E.T.

DODGE *Job-Rated* TRUCKS

FIT THE JOB ... LAST LONGER

COMMERCIAL CAR JOURNAL

with which is combined Operation & Maintenance
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TRADE SECRETS

but you're welcome to them

...says MAYFLOWER



One of Mayflower's New Semi Trailer Vans, Pulled by an International K-8.

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● Aero Mayflower Transit Company, nation-wide hauler of household goods, is one of America's smartest truck users.

Mayflower vans, controlled through Mayflower's efficient dispatching system, usually pick up a new load in the same town in which they unloaded the last . . . often keep continuously on the move for months before returning to their starting point. Do trucks stand up under such operation? Mayflower can give you the right answer, right from its books.

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In fact, International Truck Service (the nation's largest company-owned truck service organization) is one of the many good reasons why truck users like Aero Mayflower Transit Company buy Internationals by the hundreds. One of the reasons why, for over fourteen years, civilian truckers have bought more heavy-duty Internationals than any other make.



Mayflower Dispatching Offices in New York, Indianapolis and Los Angeles control the movements of the hundreds of Mayflower vans operating in all the 48 states and Canada. This efficient dispatching system assures prompt service to Mayflower customers everywhere.

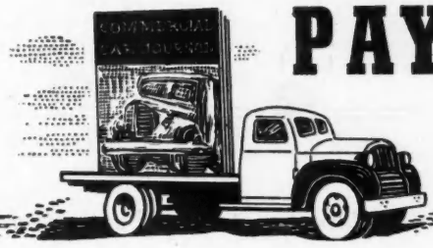
And what a great variety of jobs Mayflower handles! $130,000 worth of antiques being transferred from New York to Texas, a one-ton cheese being sent as a gift from Wisconsin to the White House, an art collection . . . these are only a few of the unusual loads Mayflower has carried, in addition to the home furnishings of innumerable families on the move.

INTERNATIONAL HARVESTER COMPANY
180 North Michigan Avenue • Chicago 1, Illinois

INTERNATIONAL

INTERNATIONAL *Trucks*

This Month's PAYLOAD



- ***Fleets Test New Synthetic Lubricants***



Until recently, data on these non-sludging, non-gumming lubricants were among America's top secrets. Excerpted from an SAE technical report, this article describes the products, reports on tests now in their second year. Page 40

- ***Trucks, Five Years Hence***



Engineer Cass surveys pertinent engineering developments, appraises them in the light of truck transportation economics, and brings into focus only those that seem likely to find their way on trucks five years from now. Page 44

- ***Increasing Traffic Hazards Face Fleets in 1946***



John Q. Public is on a driving spree. His car is not in good shape, nor are his tires. Alert your drivers to the "defensive driving" suggested in this article. See articles on Page 52 and Page 54 for more safety ideas. Page 53

- ***Factors Affecting Truck Depreciation and Retirement***



Three fleetmen outline their respective company's methods of retiring old trucks. Representing different types of operations, their methods do not agree but fleetmen in kindred operations may be able to pick up some good ideas. Page 62

- ***Key Forms Catch Failures, Speed Diesel PM***



"When you can do a repair job before the truck breaks down, that's proof that your PM System works," says this fleet superintendent. His system works just that way and he attributes much of its success to paper work. Page 70

- ***How Should Motor Oils Be Classified?***



The SAE and API have been wrestling with the problem of devising a more definitive system of labeling motor oils. At the recent SAE Annual Meeting they slugged it out to a draw. This article summarizes the proceedings. Page 78

. . . AND we'd like to call your attention to "CCJ Detroit Dispatch" on Page 92. This is a new Department. Here you will be kept posted on the behind-the-scenes activities in the automotive capital . . . Our many ears out in the field picked up some exclusive hush-hush items this month. Some are but whispers, others not confirmed but not denied. See Page 36 . . . In the article "Engineer Eyes Needs for Driver Comfort," Page 47, you'll derive comfort from the knowledge that there's more efficiency in it for you . . . For more on comfort read "New Coil Spring Suspension Boosts Payload and Tire Life," Page 82 . . . You who couldn't get to Cincinnati the week of Jan. 13, will be interested in "ATA Annual Meeting Highlights," page 102 . . . The principal topic of the Editor's mail still is standardized service instruction cards. See "Letters from Readers," Page 37 . . . Our reporter lost the seat of his pants to learn that truck mechanics are congenital tinkers, according to Pete R. O'Leum in "Mechanics, as I Know Them," Page 51 . . . The smart set will find the CCJ Quiz on Page 65 and Quiz Pix begin on Page 123 . . . To get your mind off strikes and such see Page 55 . . . For the full freight list, turn back to Page 33.

EARS to the GROUND



Confidential agents of this department, free of censor's wartime wax, are on the loose again listening, peeping, and reporting. Throw away your radar set and keep tuned to this wavelength for up and coming automotive developments

H. D. Bombshell No. 1

It is now a certainty that both Ford and Chevrolet will have heavier trucks than ever before. Ford has been making private showings of its 1947 line to large groups of fleet operators who are enthusiastic about what they have seen. The line includes many improvements desired by fleetmen, but most important is a new heavy-duty model. This has a rear axle which will permit a gross vehicle weight rating of 18,000 lb. This model should classify nominally as a 2½-tonner. It is reported that no final decision has been made as to the size of engine that will be used in this heavier model. However, Ford has a new 120-hp. job that may find its way into specifications as an option if it isn't made standard.

H. D. Bombshell No. 2

Strike-bound Chevrolet has not had the same opportunity to show its 1947 wares to fleetmen, but it is generally understood that the line will include a so-called 2½-ton model. For this job Chevrolet has the 270-cu. in. engine which made such a good showing in 2½-ton Army trucks. Those trucks had Timken axles, some of which Chevrolet itself helped to build.

International Specials

Elsewhere in this issue are details of the International Harvester Co.'s new West Coast Special model, available in a variety of engine, transmission and axle combinations to meet the needs of West Coast operators. Experimental tests now are being made with a job that may become the East Coast Special. This has the earmarks of a smart, catchy sales idea. If it "takes" perhaps we can expect Midwest and Southwest Specials.

White Whispers

The White Motor Co. is on the verge of making public its line of WB models to replace the WA Series. Included will be five truck models, three tractors and three six-wheelers. At the same time two new engines, further developments of the Super-Power model, will be announced. One will have a displacement of 451 cu. in. and the other 504 cu. in. The new trucks will embody spectacular improvements in cab comfort. Drivers will drool when they read the details.

Something Spectacular

Later in the year White plans to introduce something spectacular in the way of a door-to-door delivery model. It will be designed to carry substantial loads. The engine will be amidships and complete accessibility will be achieved in a matter of 35 seconds by means of a slick, patented arrangement.

Name Calling Standards

It won't be long now before the designation of various units and combinations of units of trucking equipment becomes standardized. The task, known as the standard nomenclature project, has been given to an SAE committee composed of fleetmen and factory engineers. The project started with a letter from Reader Young, of San Francisco, to the editor of CCJ, who recommended it to the Society of Automotive Engineers. (Sept. 1945, page 40.)

Front-Drive Delivery

This department's underground reports that the Oneonta Linn Co., Oneonta, N. Y., has plans to build a front-drive package delivery unit, powered by Hercules. We are trying to get corroboration through official channels.

Wrench Wrinkle

An outfit in Milwaukee will market a new type of wrench. A button on the side of the handle slides up and down, widening or narrowing the jaws to fit nuts of varying sizes. It's a slick trick. A fleet operator has the patent.

Locked Lubes

A perfect stranger whispered to one of our operatives that the 1947 Pontiac will have sealed lubricant in the rear axle, transmission and front-wheel bearings. No change of lubricant will be necessary for the life of the car. Detroit Agent 44 can take this as an order to get busy.

Winter Hazards Study

Up in Michigan on the edge of a lake trucks of various sizes and combinations have been put through skidding, braking and traction tests to get a scientific slant on winter driving hazards. Tests included runs with and without chains, on glare ice in various states, on snow, without abrasives and with abrasives, and with and without locking differentials. In due time the engineers will make their report.

Whirling Dervish Valve

After extensive experimental work Thompson Products has developed a valve that rotates as it pops up and down and, in the rotating process, wipes off objectionable deposits before they harden and stay put. Experiments have shown that valves with the Roto-Valve attachment keep valve seats clean. Thompson this very moment is feeling the hot breath of a zealous staff reporter. Complete details soon.

Continentals That "R" New

Continental Motors is getting ready to tell all about its new line of R Series gasoline engines for automotive installation.

Cold Cleaning

One of the big headaches confronting fleetmen is how to keep the engine cooling system clean of scale and muck. With conventional methods it was deemed necessary to douse the insides of blocks with acid solutions. Acid in hot water was considered the only available means of blasting scale, and admittedly a process that had to be done with care. During the war a cold water cleaning method was developed and used by the Navy. No acid was used and cleaning was accomplished by a tank immersion method. When a model is ready for the fleet field we will give you the dope.



LETTERS from READERS



. . . on Standardized Service Instruction Cards

Booster Also Suggests Cards for Welding, PM

EDITOR, COMMERCIAL CAR JOURNAL
DEAR SIR:

In regard to your article "Standardized Service Instructions" which appeared in the October, 1945 issue of the COMMERCIAL CAR JOURNAL, I would like to state that the proposed Standard Service Instruction Card setup in my opinion is certainly an improvement over present-day service manuals.

As we have a large shop, a great many different jobs are being performed upon vehicles of the same manufacture. This in many instances would necessitate having several shop manuals. With the card system, a man working on a motor, transmission, or various parts of the vehicle, would only have the card that pertained to the unit on which he was working.

As regards fleet operators purchasing this information, it is my opinion that the operators now recognize the importance of having proper service information available for the use of their repairmen, and that it has a direct bearing on their operating costs.

Instruction Cards should certainly contain instructions for the acetylene and electric welding repairs to various parts of automobiles and trucks that become broken or bent. It is very hard for even a first class welder to use a proper setup for repairs of any metal just by looking at it. As repairs of this type enter greatly into repair costs I feel that this is extremely important.

There also should be at least one section devoted to preventive maintenance which is the surest step to reduced operating costs.

ALEX F. HEROLD, Supt.,
Motor Transport Department.
The Pure Oil Company, Olney, Ill.

Prefers Cards 12 x 14 in.

DEAR SIR:

The instruction service card is a much better plan than the present-day manual. The mechanic will have a better opportunity to study the cards than a manual and will understand it better.

I would think any fleet operator would be willing to pay a nominal sum for such instructions.

I think the 14x18 card is a little large. Something like a 12x14-in. would be large enough.

J. EDW. JAYROE,
Continental Baking Co.,
Dallas, Tex.

Cards OK if Bound

DEAR SIR:

Personally, I doubt if the average maintenance mechanic would appreciate service cards. True, they could be taken out of a file and become more handy as a reference on the job, but this is where the rub comes in: It is doubtful if the busy mechanic would replace the card in the file, so, in a short time, many cards would become lost. Then, too, they would become soiled or torn and useless.

If the plan includes binding the cards into a permanent portfolio, the above statement can be ignored. This type of reference is most desirable and would be highly appreciated. I think the size suggested is ideal and allows space for ample reference.

By the way, personally, I feel that the reference cards should include many more seemingly unimportant instructions such as whether the pistons are removed from top or bottom of engine; whether water pump can be removed without moving radiator; more definite clutch data, etc.

My guess is that the fleet owner would gladly pay the cost of printing this new type reference record. Not only would it mean a saving of time but will result in better maintenance repairing. Regardless of the number of years' experience, the best of mechanics find it necessary to refer to some authority for an occasional job. None of us can remember tolerances and adjustments when we cover the general field of maintenance equipment.

With best wishes in your venture to help the mechanics and my personal thanks for this opportunity to express my opinion.

JOHN VELOTTA,
Hollywood, Cal.

Would Like 9 x 13 Card

DEAR SIR:

We think the proposed standard service instruction card is an improvement over the present day manuals. We think mechanics would be more likely to use the cards and that fleet operators would be willing to pay a nominal charge.

We think the 14x18 size is a little large. About 9x13 would be better.

R. C. GREELEY, Pres.,
Greeley General Warehouse Co.,
Cleveland, Ohio.

Favors Cards

DEAR SIR:

I think the cards would be better. Size unimportant.

VERN VAN HORN,
Williamette Construction Co.,
Portland, Ore.

Another Vote for Cards

DEAR SIR:

Your idea of service cards is undoubtedly far superior to the majority of present day service manuals. So many manuals are rather vague in their description of service work and have insufficient illustrations to cover the gap. Too many say "See your authorized dealer."

Most mechanics take readily to illustrations but few care to read descriptions of repair work, especially if it is written in technical language.

Maintenance-minded fleet owners would probably be very glad to stand some added expense for adequate manuals. Those who would not, probably do not even bother with the ones given free.

The size you mention (14x18) is large enough for clear illustrations, but not too large for convenient handling.

(TURN TO NEXT PAGE, PLEASE)

LETTERS from READERS

(Continued from Page 37)

Too many manufacturers give no service data for service on installations on their trucks which they themselves do not manufacture.

This topic is like the brook—could go on indefinitely. I think all mechanics appreciate a chance to express an opinion occasionally, especially to someone interested in their work.

MARION L. GREEN, Mechanic,
Delaware State Highway Dept.,
New Castle, Del.

Cards Would Promote Better Maintenance

DEAR SIR:

My opinion is that the proposed Standard Service Instruction Card for on-the-job use would be more useful than the present-day service manual. Such instruction cards would lend themselves to better use on the job, than a complete manual for the entire vehicle.

It is my feeling that mechanics would use individual cards if they could readily be obtained from the shop files.

In view of the greater job use from Standard Service Instruction Cards to better the fleet operation, I believe they would be willing to pay a nominal sum for such cards.

The 14x18 in. size appears to me to be practicable as the main thing in regard to the size of the card would be to have it large enough to show the required information, and not too large so as to make it cumbersome or awkward to handle.

It has been my experience that the mechanics have been greatly handicapped due to lack of operating instructions on specific makes of equipment. Instructions that are furnished in some of the manuals are not complete and it is difficult for a mechanic with greasy hands to use such instructions.

R. O. GUSTAFSON, Equip. Engr.,
U. S. Dept. of the Interior,
Fish & Wild Life Service,
Chicago, Ill.

Prefers Manual With Suggested Changes

DEAR SIR:

Because cards would be too easily lost, I would prefer the manual, with the following suggested changes:

1. More exploded views of assemblies and their relation to each other.

2. More detailed information on trouble shooting, nothing in manuals to date on this. Only disassemble and assemble. There is never anything to help mechanics locate trouble quickly and make repairs in the shortest time.

3. Put all specifications at the end of each unit section so it could be found easily rather than at end of book.

4. Put name and model of vehicle on edge of book at binding, so when these books are put in book rack they can be pulled without taking down the entire pile to find the book wanted.

We feel if the service manual was properly written for the would-be mechanic, as pointed out above, it would go a long way in helping to train the men more quickly as the automotive repair business is badly in need of good men today.

T. E. GULLEDGE, Garage Supt.,
Georgia Power Company, Rome, Ga.

Cards Would Eliminate Implication of Ignorance

DEAR SIR:

I think the service cards are better than the books. A mechanic will use them because he can grab them without thumbing through pages, also it would not look as though he were in complete ignorance of the job, which the spectators seem to think, and like to orate on, if they see him reading a book.

The operators would surely be willing to pay, especially if they were kept informed on changes or better methods.

The size of the card seems large to me but that isn't important.

I suggest that information be given as to the pitfalls to watch out for, which happen in spite of rigidly following the instructions.

WM. J. DOWD, Mechanic,
Winchester Highway Dept.,
Winchester, Mass.

Prefers Cards, OKs Loose-Leaf Manuals

DEAR SIR:

I favor Standard Service Instruction cards over the present type of service manuals. It is my opinion that they would be used more than the present manuals because they would be uniform in arrangement and the method of indexing would eliminate the necessity of reading so much text to gain information wanted.

The size of the proposed cards would allow better illustrations of assemblies. Another advantage is that the cards can be placed so the mechanic can see them, whereas the present book is always falling shut and necessitates considerable thumbing to arrive at the information desired. The card applying to any operation can be readily selected and placed where it can be observed without difficulty.

Also, mechanics doing different operations at the same time on the same model and make can each have their respective cards out of the file at the same time, which cannot be done with present manuals.

The cards can be cleaned up if they become greasy which cannot be done with the present manuals.

I feel that many fleets would be willing to stand a part of the expense of publishing the cards. Although it would seem that with 16 subjects now suggested, and with some additional ones which will develop later, that, even though individual cards would be expensive, the small number required would offset the cost of printing.

H. R. GRIGSBY, Supt. Transp.,
Oklahoma Gas & Electric Co.,
Oklahoma City, Okla.

Cards a Time-Saver

DEAR SIR:

The card system properly worked out would certainly be the answer to the complicated repair manual, which requires almost as much time to find the desired page, etc., as the job itself requires.

Size 14x18 is too large—12x14 would be my judgment.

I think all cards should be as simple and as instructive as possible. They should contain a good plain assembly picture, showing all parts and the way they go together.

I am sure from past experience one can do a job in one-quarter the time by seeing everything than if he had to read a page of the engineer's ideas.

ROY CONRATH,
Conrath Auto Repair Shop,
Indiana, Pa.

Loose-Leaf Manual; Card "If"

DEAR SIR:

The present service manuals would be, in my opinion, the proper instruction pamphlet provided the pages were in loose-leaf form.

Personally, I believe the standardized card form would be the proper card to use if the fleet operator standardized on equipment in operation.

I believe a card 8x11 would be the proper one to use.

JACK GOLDSTEIN,
Mgr.,
Purple Swan Transportation,
St. Louis, Mo.



1. Boon or Boondoggle . . . 2. Cab Comfort . . . 3. Windfall for Fleets

Boon or Boondoggle

THE PRESIDENT has called a Highway Safety Conference for May 8 to 10. A top coordinating committee has been named which includes representatives of those who build the highways and those charged with regulation. But, believe it or not, commercial which operators who are vitally concerned with safety do not have a representative on this top committee.

Trying to get a sound reason for this, COMMERCIAL CAR JOURNAL has been told that expediency is the only excuse for the omission. Yet expediency did not prevent adding the Provost Marshal General to the committee after it had been formed and had met with the President. Up to that moment, apparently, the size of the committee was not frozen. Why should it be frozen now?

Officials at the Federal Works Administration, which is responsible for the conference, maintain that highway users and transportation experts will have adequate representation on the eight conference committees which will do the actual work of the conference. These committees allegedly will be on a par with the top coordinating committee. The topics to be considered by these committees will include accident reporting, enforcement, engineering, laws and ordinances, driver licensing, public information and public support. This assurance is gratifying but it is not a reason for denying highway users representation on the top committee. "Denying" is the proper term, because the matter has been brought to the attention of the FWA and the only response has been an invalid excuse. The unfortunate slight to highway users should be remedied at once.

The primary objective of the President's conference is good. It is to mobilize public support for a postwar attack on the highway accident problem. The attack on such a problem should enlist the aid of practical men. If it doesn't, the conference may take the aspect of an indignation meeting with state governors and other politicos viewing the problem with alarm and doing exactly nothing practical about it, as has been the case with so many Washington conferences.

What could be a practical boon should not become a political boondoggle.

Cab Comfort

CAB improvements to provide driver comfort and promote safe operation are a truck industry postwar must. There was agreement on this at a session of the recent SAE meeting in Detroit which is reported in detail elsewhere in this issue.

As one engineer put it, drivers spend more time in their trucks than in their favorite armchairs at home.

It seemed to be generally agreed that there is need for better seats, better ventilation, better visibility, better soundproofing and more accessible controls.

The workout that drivers get in today's seats is an exhausting ordeal in itself. Depending on cracks and openings for ventilation provides little relief in summer or winter. Some artificial means of ventilation is required. Soundproofing is necessary because the noise is high in the close quarters of a cab and contributes to fatigue. Even the size of the steering wheel deserves scientific study. Certain sizes contribute to arm stiffness, according to one engineer.

But all this costs money, and if fleet operators want it they must demand it and be prepared to pay for it.

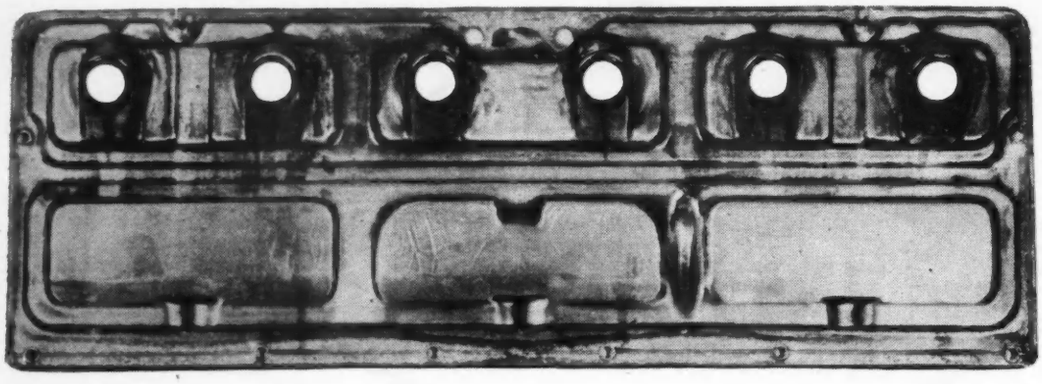
Will the investment pay dividends? It should . . . in better employee relations, in the maintenance of faster schedules and in safer operation.

Windfall for Fleets

THE "Washington Runaround" reports that OPA is considering a 25 to 27 per cent average rollback from current truck prices. This will be pleasant to the ears of fleetmen but there's no cause to make whoopee just yet.

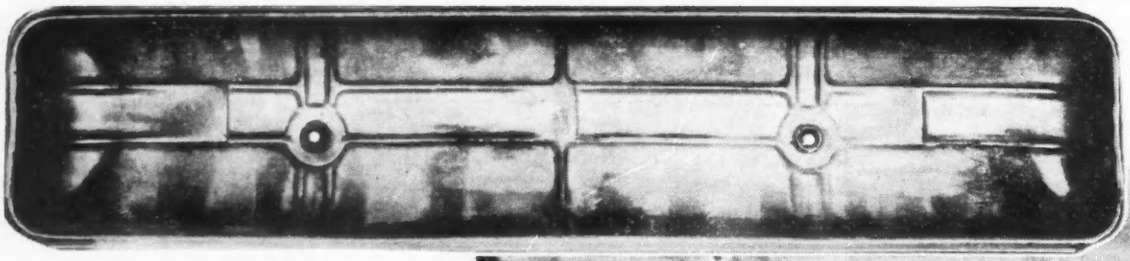
As we understand it the rollback figures making up the 25 to 27 per cent average were determined months ago on the basis of production costs then current. Today the unions are demanding and receiving wage increases which will obviously boost production costs. A rollback as of today must take this into consideration in fairness to the manufacturers.

Some sort of a rollback is a distinct possibility. But it will be confined largely to light and medium trucks. Some heavy trucks may be rolled back slightly but for the most part will stay put. Other heavy trucks may get price increases.



Fleets Test New





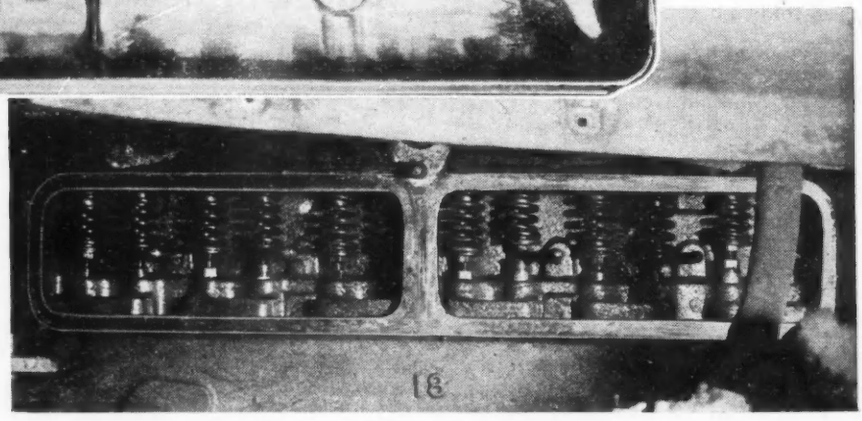


Fig. 1, top of page. Chevrolet engine side plate after 36-hr. test with lubricant LB-300. Little oxidation or corrosion is in evidence. Fig. 2, center. Oil screen and rocker arms from same engine in same test

Fig. 3, top. Valve cover of same Chevrolet engine shows clean surface. Fig. 4, above. Plymouth valve chamber is free of deposits after 70,000 miles of operation with LB-300

IN CONSIDERING a product which is chemically, and in other respects, quite different from petroleum oils, a number of questions arise: Is it a good lubricant? Is it resistant to oxidation? How does wear of the engine compare with the best petroleum oils?

Does an engine consume more oil? Does it corrode the bearings and other parts of the engine? Does it permit engine starting under low temperature conditions? Does it form more or less sludge and varnish in an engine than petroleum oils?

Our laboratories are well equipped to provide the answers to these questions and work along these lines has been in progress for several years. In addition to a fleet of laboratory owned test cars, 40 vehicles operated by laboratory employees have been continuously used for test purposes. Also, over one hundred automobiles operated by private individuals have been on a test basis for over a year.

Road experience has been further supplemented by tests in three privately owned truck fleets having no connection at all with Union Carbide and Carbon Corp. or its subsidiaries. The experiences of the Army Ordnance Department and the Army Air Forces have added to

Tests, now in second year, show absence of sludge and varnish, resistance to deterioration, favorable consumption comparison, good cold weather cranking characteristics

Synthetic Lubricants

by

J. C. KRATZER
Linde Air Products Co.

D. H. GREEN
National Carbon Co., Inc.

D. B. WILLIAMS
Carbide and Carbon Chemicals Corp.

FREE FROM SLUDGE GUM AND VARNISH

This article, excerpted from a paper presented by the authors at the SAE Annual Meeting in Detroit on Jan. 7-11, 1946, is confined to data on those synthetic lubricants designated by the manufacturer as the LB series because it is best adapted for use in automobiles, trucks, buses and tractors. This series is marketed by the National Carbon Co., a unit of Union Carbide and Carbon Corp., in only two limited areas in the East this winter.

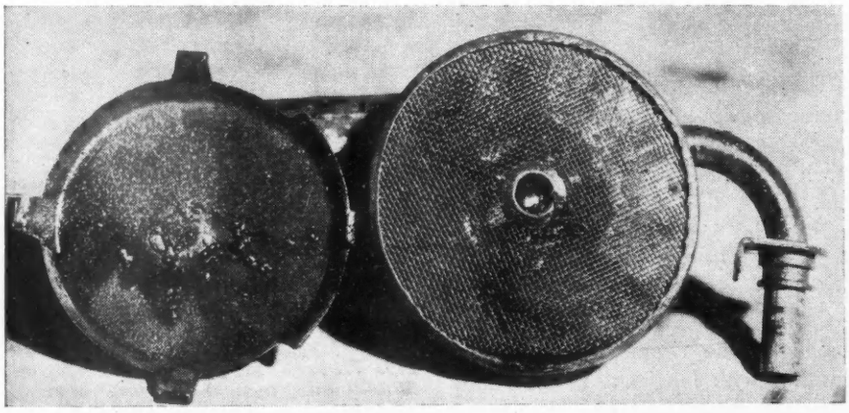


Fig. 5. Plymouth oil screen after 70,000-mile test. Consumption and wear of engine parts compared favorably with petroleum. Engine remained essentially free of varnish and sludge

our knowledge of the performance of these products in engines.

Wear Characteristics

LUBRICANT LB-300 was tested in a great many engines on the dynamometer stands and operated over two million miles in various types of automobiles and trucks before being offered for sale for automotive use. Measurements have demonstrated that wear of the moving parts is comparable to wear with mineral oils.

Actual wear data from road test vehicles, operated under both low and high speed conditions for periods up to 2½ years, have shown wear values comparable to those obtained with the better grades of petroleum oil. This includes vehicles with previous petroleum oil history as well as new vehicles in which nothing but the synthetic oil was used in the engines.

Stability and Bearing Corrosion

A LOW oxidation stability would stamp an oil as undesirable for use in an internal combustion engine. Typical 36-hour Chevrolet engine test results, which are a generally accepted means of evaluating oxidation resistance of a lubricant and its corrosive effect on copper-lead bearings, show that the engine cleanliness rating of the synthetic lubricants is about equal to that of a good heavy-duty mineral oil meeting Specification 2-104(b) such as Committee Oil-B-3. Figs. 1, 2, 3 show the appearance of engine parts which were photographed after completion of the 36-hour test with lubricant LB-300.

Special Engine Test

WHILE on repeated tests the synthetic lubricant passes the standard 36-hour Chevrolet oxidation and corrosion test in a highly satisfactory manner it was believed that a new type of lubricant such as this should be evaluated under more severe conditions. Therefore, LB-300 was run for 24,000 miles (480 hours) in a Chevrolet engine under the same oil and coolant temperatures as the standard 36-hour test (280 deg. Fahr. oil and 200 deg. Fahr. water), but the normal 30 hp.

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. . . Synthetic Lubricants

(Continued from Page 41)

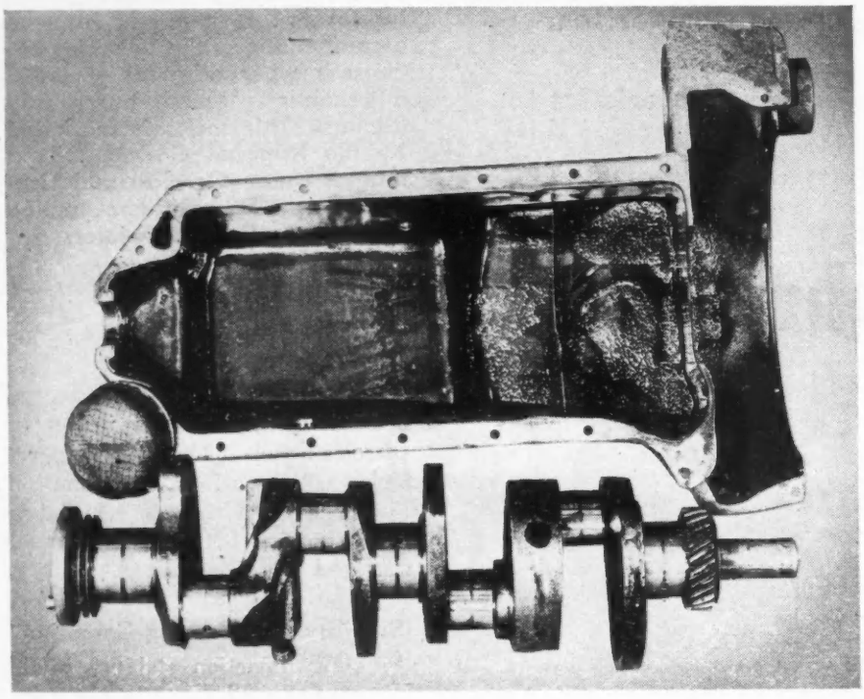


Fig. 6. Ford pan and crankshaft after 50,000 miles of operation on synthetic lubricant. LB-300 permitted good starting of engine under low temperature conditions. Oil did not adversely affect gaskets or fiber timing gears

load was increased to 60 hp. and the engine speed was dropped from the standard 60 m.p.h. to 50 m.p.h. Other engine conditions were kept the same as on the standard 36-hour test, except that the lubricant was changed after each 6000 miles of operation.

In order to have some basis of comparison under this type of test condition a second Chevrolet engine using heavy-duty Committee oil B-3, was run simultaneously under exactly the same conditions. The following table shows the cleanliness ratings for the two lubricants under these test conditions at various mileages.

ENGINE CLEANLINESS RATINGS*
(Varnish and Sludge)

Mileage	Engine Rating Oil B-3	Engine Rating LB-300
2,000	94.6	96.9
4,000	84.9	91.8
6,000	81.2	93.0
12,000	75.6	86.1
18,000	68.1	68.2
24,000	59.5	71.1

* 100% rating means a perfectly clean engine.

These data demonstrate that the engine remained clean for a longer operating period with the synthetic lubricant than with the petroleum oils. Since this cleanliness characteristic is inherent, this performance standard is maintained over a very long period with LB-300.

On this 24,000 mile test the corrosion of the copper-lead bearings was less with lubricant LB-300 than with Committee Oil B-3.

The viscosity increases for the two lubricants for each 6000-mile increment of the 24,000-mile Chevrolet test previously referred to are given in the following table.

LUBRICANT DETERIORATION

Mileage*	Per Cent Increase in Viscosity at 100° F. Oil B-3	LB-300
6,000	47.5	14.2
12,000	28.1	7.0
18,000	35.6	11.8
24,000	27.6	14.0

* Lubricant was changed at each 6000-mile period.

Oil consumption data for the 24,000-mile Chevrolet test averaged 727 miles per quart for Oil B-3, an SAE 30 oil, and 696 miles per quart for lubricant LB-300.



Fig. 7. Ford pistons and rods after 50,000-mile test. Less than normal amount of combustion chamber deposit was noted. Wear of engine parts and bearings equal to petroleum

Field Tests in Vehicles

EXTENSIVE testing of lubricant LB-300 in vehicles under actual road conditions was conducted in a fleet of laboratory owned test cars to evaluate performance under field conditions and to obtain informa-



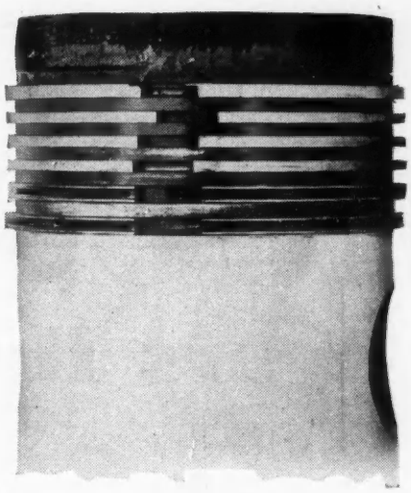


Fig. 8, left. Caterpillar piston after 480-hr. test with LB-300 synthetic lubricant. Some carbon is noted behind top ring, and soot is noted on piston skirt. Fig. 9, above. A small amount of detergent improved the results

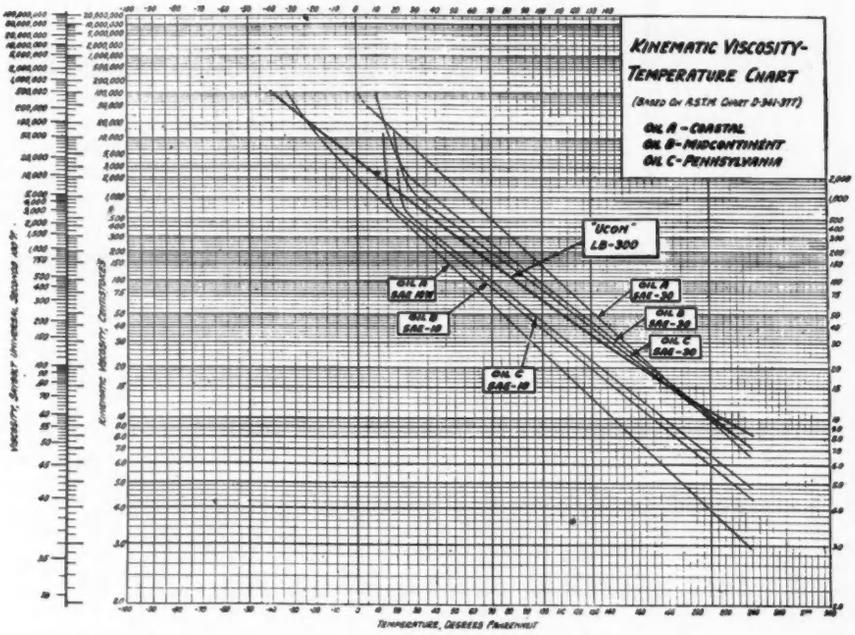


Fig. 10. Kinematic viscosity-temperature chart showing viscosity temperature relationships between Costal, Midcontinent and Pennsylvania oils—SAE 10 and 30—and synthetic LB-300. Note that one grade of synthetic covers range of three grades of petroleum oils. Seasonal oil changes are thus unnecessary

tion with respect to service problems which might be encountered during use in engines. A number of new cars were purchased in 1942 and serviced with lubricant LB-300. Some of the engines were dismantled and the parts accurately measured prior to servicing with this synthetic lubricant, but most of the engines were started on test after a simple drain and flush procedure. This latter procedure was used so there could be no question of altering clearances while taking wear measurements. Conclusions drawn may be summarized as follows:

1. Clean engines remained essentially sludge and varnish free under operating conditions which normally promote formation of these oxidation products.

2. Wear of engine parts and bearings was equal to that of petroleum oils.

3. Oil consumption compared favorably with petroleum oils.

4. LB-300 permitted starting of the engines under low temperature conditions.

5. The oil does not adversely affect gaskets and fiber timing gears.

6. Leakage is not a problem in a properly gasketed joint. However, the lubricant is a solvent for the oxidation products of petroleum oil and the cleaning action of the synthetic lubricant may tend to open up leaks plugged with oil oxidation products. While this can also result from the use of heavy-duty oils containing detergents, solvent rather than detergent action is responsible in the case of the synthetic lubricants.

7. In cars operated exclusively on the synthetic lubricant, there was less than the normal amount of combustion chamber deposit.

Figs. 4 to 9 inclusive present photographs of various parts of test vehicles operated exclusively on synthetic lubricant for 50,000 to 70,000 miles. The cleanliness of the engine parts is apparent in these photographs.

Commercial Fleet Tests

IT WAS realized that while the performance of synthetic lubricant may be excellent in new vehicles, its special characteristics with respect to conditions in old vehicles should be thoroughly investigated. Therefore, several commercial fleets were selected in which the product was tested. An effort was made to provide fleets that represented conditions of (a) low mileage, high gasoline dilution, water condensation and heavy sludge, (b) medium mileage, intermittent idling type of operation, and (c) heavy duty, medium to high mileage operation under high and low ambient temperature conditions.

In each of these fleets several of the engines were initially inspected and at various intervals thereafter to observe the sludge conditions. No special precautions were taken in changing these fleets over to synthetic oil except to change the filter cartridge if the vehicles were so equipped, and to change the test

(TURN TO PAGE 180, PLEASE)

TRUCKS
Five Years Hence





by ROBERT CASS*
Assistant to the President
The White Motor Co.

WILL HAVE THESE MECHANICAL FEATURES

ENGINES—Gas turbines: " . . . power plants in sizes of 300 hp., occupying a smaller space than similar reciprocating engines . . . cost picture will be favorable."

ENGINES—Gasoline: "expect such changes in fuels that, with supercharging, will make possible running the BMEP up at least to 180 . . . price per horsepower to be reduced."

PISTON RINGS: "Chrome-plated rings seem to be a step in the right direction." BEARINGS: " . . . New alloys should make possible a 50-per cent increase in bearing load."

300-400 hp. gas turbine power plants, 180 BMEP supercharged gasoline engines with fuel injection, automatic transmissions, power steering, and other advances likely

DURING the writing of this paper I have found myself wondering just how far into the future we should practically consider. Past experience seems to indicate that at least five years hence is a reasonable period to consider and I have endeavored to provide some food for thought with what is hoped is the proper degree of attention to the economics involved. The subject matter of this paper does not represent my company's position but are the ideas of a number of engineers in various sections of the truck field.

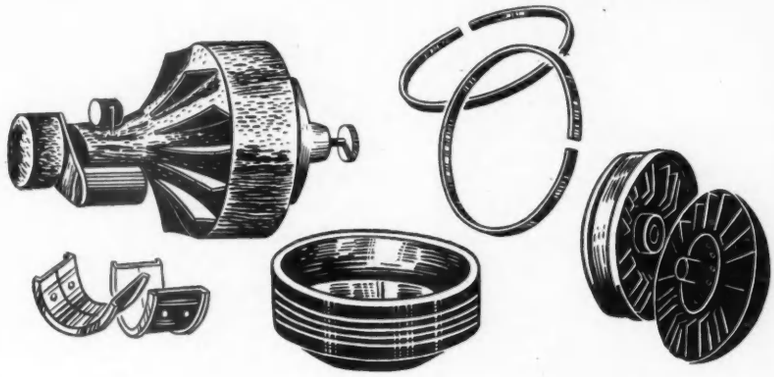
It is safe to say that if roads are built within the limits of reasonable standards set up by the Public Roads Administration, speeds of even as high as 70 m.p.h. would have to be contemplated in the design of the component parts of our trucks.

It would also seem reasonable to assume that we should consider truck development, by and large, as a separate development from that of the passenger car. Our engineering efforts should, therefore, be directed to considering all the component parts as only truck items. We should, therefore, think of the development of the vehicles of the future in terms of single purpose tools in which the trucks for a particular industry which depends on transportation would be designed definitely and solely for that industry. To some degree, this has already been started by the designs for door-to-door delivery and it may be equally important to design a vehicle for over-the-road operation which will bear no resemblance to our present designs and present methods of manufacture.

Engines—Gas Turbine

WITH regard to the development of the units, we should first consider the power plant.

* Excerpted from SAE Annual Meeting paper.



SUPERCHARGING: " . . . should not cost more per horsepower than the cost of the same power increase in a larger engine." TRANSMISSIONS: "Automatic transmissions and fluid means of transmission are definitely in the future picture."

SUSPENSION: "The use of rubber as an elastic element lies ahead . . . the bellows-type spring lends itself to innumerable treatments. STEERING: "Hydraulic or electric power has possibilities, and the development of a new mechanical steering gear offers promise . . . We can look forward to a great deal of development from the angle of safety."



There has been much discussion on the very startling developments during the war of the gas turbine as distinct from the turbo jet. If it can show an improvement in the five major considerations in engine design, it has to be considered as a future possibility as a power producing unit first without relation to how this power can be utilized or applied.

Five basic considerations would seem to be: First, size; second, thermal efficiency as represented by the miles per gallon; third, the maintenance of engines; fourth, the weight; and fifth, the first cost.

Consultation with people interested in the fundamental development of small size gas turbines seems to indicate that there are no major drawbacks to making the powerplant in sizes perhaps of 300 horsepower occupying a smaller space than now occupied by a similar reciprocating engine with its cooling system, etc.

At the onset, it is considered reasonable that we could stand a higher specific fuel consumption as the fuel picture lends itself to the use of lower price fuels, both oil and gasoline. The specific fuel consumption of the gas turbine at the present time is roughly twice that of our orthodox truck engine and even though the fuel used may be less in cost per gallon, real progress can only be measured in an increase in output per cubic inch for each pound of fuel used.

In the sizes contemplated for the truck picture, there is no need for a cooling system as the temperature suggested—2000 deg. Fahr.—would be maximum and any added efficiency which came from cooling and regeneration of any kind would add relatively little to the total overall economy picture but would add a lot of complications.

It is anticipated also that the cost picture will be favorable once the regular automotive methods of production are applied. At the onset, it is anticipated that the pressure ratio could be five to one and compressors available in the size necessary for this are relatively inexpensive. In the turbine itself, the question of cost seems to be reasonable in the horsepower range we are considering as maximum at this time. We might have difficulty in connection with the cost in smaller sizes but in the future program this could be merely a question of production tooling. Certainly, from the design standpoint as affecting maintenance, the overall picture is one of great simplicity and those who are enthusiastic naturally feel that none of the other problems is too great. Lubrication is thought to be a very simple matter as compared to our present engines and the tolerances in manufacture are in the neighborhood of .010 or .020 on blades and such parts rather than the extreme limits of accuracy found necessary in the power producing parts in reciprocating engines.

One of the principle difficulties as far as the engine itself is concerned, revolves around its speed which obviously must be very much greater than that of the reciprocating engines —at least in the ratio of four or five to one.

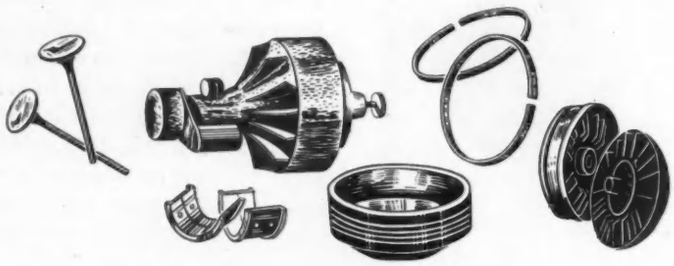
Whilst it is possible to mount the rotating shaft on anti-friction bearings, and it would be desirable to do so, the question of life of that part constitutes a problem as the peripheral speed of the balls is very high and the life at the present time in aircraft installations is relatively low in terms of hours. Figuring on what should be a normal life expectancy of such bearings, it seems that we must expect a life of 5000 hours as a minimum. Manufacturers of such bearings are not too worried about this if lubrication is good.

The characteristics of the engine, however, call for a maximum speed variation from the top speed of no more than 25 per cent if anything like efficiency is expected. The question, therefore, of power transmission in ground transportation becomes one

(TURN TO NEXT PAGE, PLEASE)

TRUCKS Five Years Hence

(Continued from Page 45)





NEW MATERIALS ON WAY

"Materials will have corrosion-proof, insulating, non-inflammable and absorbing qualities well within the limits of the plastic field. Weight-saving possibilities will be expected . . . Within the next few years the light weight metal industry will force itself more and more into the truck field, but prices must be kept down."

of electric or some other form of torque conversion not yet developed.

The size of the unit for 300 to 400 hp., it is believed, could be in the neighborhood of 36 in. long and the diameters of same occupying much less space than now taken up by our reciprocating engine.

It must be remembered that the standards already established in the motor truck field are high—100,000 miles being such a common figure before any major work is done on an engine that it has become the minimum consideration of the engine designers today and we are constantly looking for changes that will increase this mileage. The gas turbine, therefore, would seem to be facing these very serious problems of development. On the other hand, there can be no gainsaying the many advantages that could come from such an essentially simple engine.

Conventional Engines

WITH respect to the development of the conventional engine for truck purposes, there would seem to be enough reason to expect such changes in fuels in the years stated that, with supercharging, will make possible running the BMEP up at least to 180 and with this large increase in engine output for truck operation, it is expected that maintenance standards now existing can be held and perhaps improved.

Certainly the economics of the truck transportation picture demand that in some way the power transmission line be reduced in weight and cost and the price per horsepower of the engines is expected to be reduced as it has been constantly over the past years. It is expected, therefore, that engines of around 600 cu. in. now used in trucks, can be reduced in size using fuel and supercharging developments, to something over 400 cu. in. and in so doing bring about not only the reduction in price per horsepower but a reduction in the cost and weight of the units behind the engine.

With respect to the range of engine power that the future trucks will have, 300 hp. truck engines are not by any means an impossibility. In fact, engines of that horsepower are now being used somewhat experimentally on the Coast. Weight per horsepower, using common materials, of between 5 and 6 lb. in future engines is very desirable. To make this possible, we shall, of course, require a fuel of 90-95 octane and lubricating oils of such a quality as to handle temperatures well over 250 deg.

There are some specific parts of conventional engines which should be reviewed at this time:

Piston Rings

PISTON rings, which are so vital in future designs, are under the spotlight. The life of the rings is still far short of what we need in our future high output engines assuming that they must be reasonable in price as compared to present day prices. It also seems likely that temperature conditions will be more of a factor than the pressures involved. Whilst chrome-plated rings seem to be a step in the right direction there are, in the opinion of the ring manufacturers, other lines of development which seem more profitable to pursue. A reasonably priced ring to withstand high temperatures and pressures and still have as good a life as found in present-day engines, seems to be a distinct possibility.

The ring people also feel that the greatest aid which can be given to the functioning of piston rings is to develop cylinders and pistons which will remain as nearly symmetrical as possible to their original shape under operating temperatures and to provide cooling that will keep the temperatures as low as possible. Oil cooling of pistons suggests one way of controlling high temperatures.

Pistons

IN laboratory studies standard design pistons satisfactory in present engines fail at the higher BMEP's and temperatures to give life com-

(TURN TO PAGE 136, PLEASE)

TO HELP DRIVERS DO A BETTER JOB

★ Redesign cab and controls to permit driver to sit at extreme left for safer vehicle operation.
★ Provide greater visibility by the use of larger glass sizes.
★ Equip with comfortable seat.
★ Install defrosting methods for side windows.
★ Provide no-draft ventilation.
★ Supply proper door closures.
★ Equip with power steering.



Engineer Eyes Needs for Driver Comfort



O. F. Quartullo

Material, cost and production problems responsible for driver discomforts. Engineer's experiments prove possibility

by O. F. QUARTULLO*
Visioneering Co., Inc.

WHY has the truck driver been subjected to the discomforts that are not present in the passenger car? It surely isn't because the engineers that design trucks are not capable of doing as good a job as possibly the passenger car engineers, but it has been due to the following:

1. That, as a rule, production is so small on most truck models that it does not warrant the proper and necessary tooling and production fixture costs that are necessary to produce a comfortable cab.

2. Except for some cab-over-engine models that have been produced, the driver was forced to sit in the wrong position in relation to the proper driving functions that he has to perform. This primarily was due to the location of the steering gear, and, as we all know, the majority of the trucks have purchased the steering gear mechanism from a steering gear manufacturer. It was somewhat standard, and, in the past, it has been mounted in the inside of the main frame.

Therefore, inasmuch as the driver has to sit back of the steering wheel, he has been sitting toward the center of the cab instead of out to the extreme left side—where he should be to operate and see properly, both while he is driving forward and especially so when he is backing up with a trailer or a standard body.

3. The transmission manufacturer has been somewhat in the same predicament, due to slight additional costs in the production of the transmission that would have remote controls or controls that would be in the proper place for the convenience of the driver. In most cases, the controls for the gear shift levers have been in the center of the vehicle. Therefore, the driver has been placed in the wrong position instead of out to the left where he really belongs.

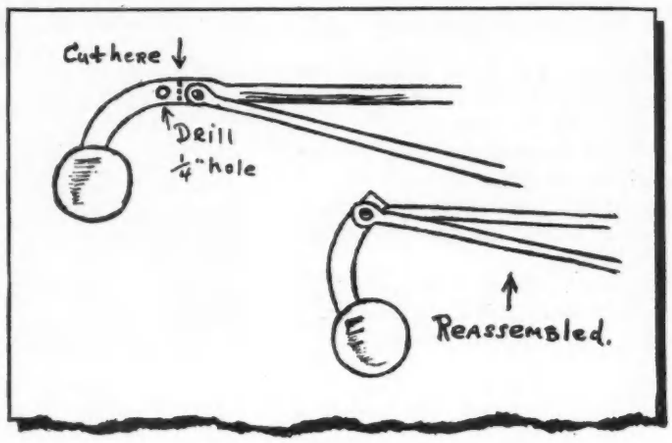
Now I know that to attain these changes, it naturally entails some engineering and a possible slight additional cost. But I wish to assure you that it can be accomplished, because I have built several models where the driver sits to the extreme left side of the vehicle, and I feel that there are definite advantages that should not be overlooked in the future cab.

4. Due to the inability of obtaining glass sizes that the engineer would like to have, he has been forced to use whatever size of glass he could obtain without cost penalty. This condition is because the pas-

(TURN TO PAGE 66, PLEASE)

*Excerpted from paper presented at SAE Annual Meeting.

Commercial Car Journal will pay $5 for acceptable shop hints and $5 for parts salvage tips. A snapshot or a rough drawing with a simple explanation is all that is needed. CCJ will polish them for publication. Send one in today! Shown at right is a typical contribution—just a rough sketch and a brief statement of the problem and its solution. See how it looks in Fig. 1. This brought Mr. Seftchick $5. There are other $5 bills waiting for your contributions. Don't underestimate your ideas. Let the editor judge.



SHOP & SALVAGE

2. Battery Cable Protector

by Jean Babin
Shop Superintendent
Columbian Laundry, Newark, N. J.

We have found that grease and grime on a defective battery cable causes shorts on many of our trucks and passenger cars, especially when the cable runs across the transmission, near exhaust pipes and along the engine block.

We salvaged these cables and stop short circuits by running the battery cable through a short length of heater hose. The cable can be lubricated with a little brake fluid and will slip through the hose easily.

Discarded heater hose will work very well for this job. It takes only a few minutes to do the work, and the saving of cable replacement and short circuits soon pays for the effort.

3. Improvised Tire Spreader

by S. G. Barnard
Lloyd Transfer Co., Seattle, Wash.

When I do not have a casing spreader handy, I use a long speed wrench and find it works just as well. I place the bow in the casing and turn it crosswise in the way a tire spreader is used. This practice saves time looking for the spreader and, as the wrench is usually handy, it is used quite frequently.

4. Radiator Mounting Tip

by G. E. Upperman
Garage Superintendent
Continental Baking Co.
Wheeling, W. Va.

We have had trouble on our Ford trucks with the radiator hold-down plate tearing loose from the bottom tank. This seems to happen when the truck is twisted while running over uneven ground.

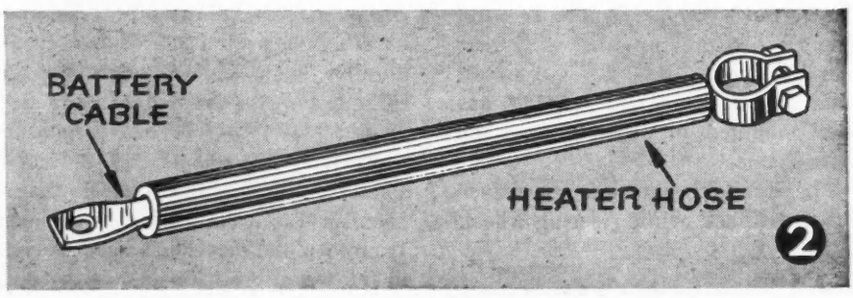
We have eliminated this trouble by placing a Ford V-8 valve spring on top of the hold-down plate. This is used in place of the rubber grommets and the short stiff springs. The drawing will show the principle of this mounting design.

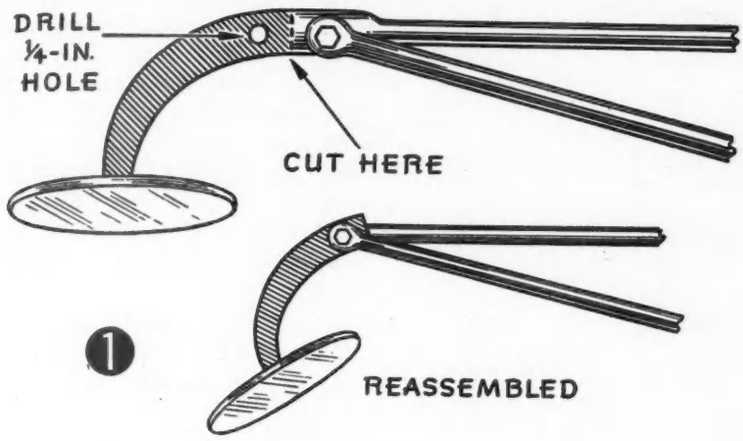
5. Bell Housing Salvage

by Tim Vahle
Foreman, Iowa Ordnance Plant
Burlington, Iowa

On many of our Chevrolet pick-up trucks the drive shaft bell housing becomes worn, rubs on the transmission bell housing support and wears it so much that a new transmission case is sometimes necessary.

I have been salvaging these transmission bell housing supports by welding the race full of bronze and turning it down to correct size and





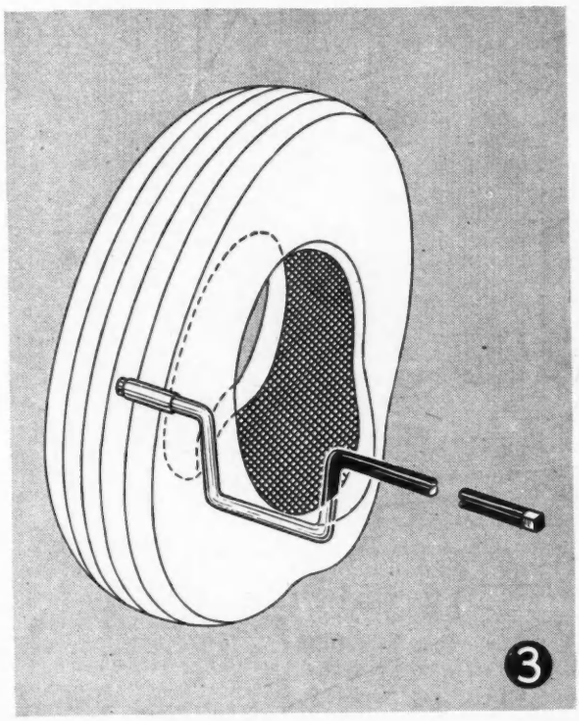
1. Hinged Mirror Bracket

by Frank E. Seftchick
Swift & Co., Brooklyn, N. Y.

Here is an idea we have found very useful. The rear view mirror brace attached to the upper part of the cab door usually sticks out too much and is easily damaged when backing or when driving too close to a tree or building.

We cut off the bracket near the brace as shown in the drawing. We drill a ¼-in. hole in the piece cut off and reinstall it at the brace. This does not shorten the arm too much, and it permits adjustment. Then when it is bumped, nothing is sprung.

HINTS



smooth finish in the lathe. This provides a bronze wearing surface hard enough that turning and rubbing in the bell housing support does not cause further trouble.

This works quite satisfactorily and saves a new transmission case every time.

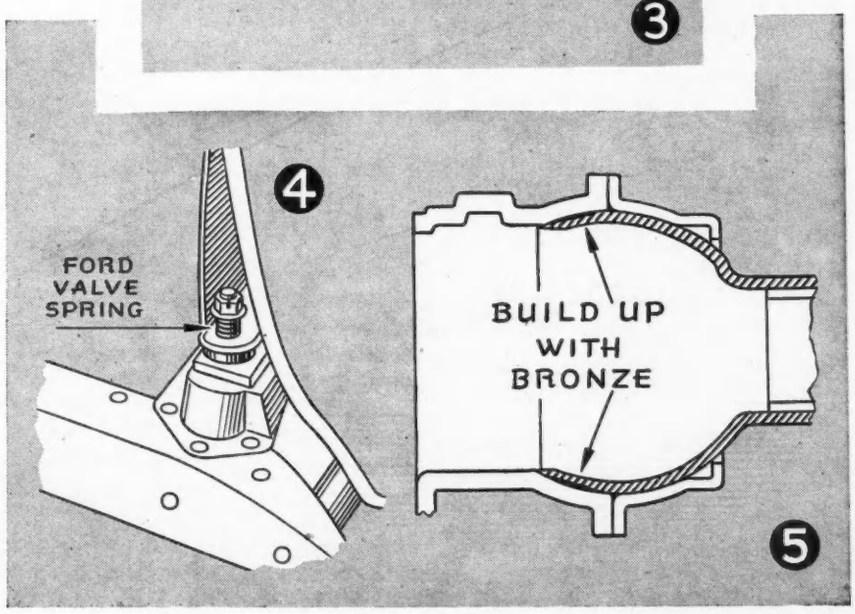
6. Cylinder Sleeve Press

by G. W. Layne
Brooks Transportation Co.
Richmond, Va.

I have made a cylinder sleeve press that has become a handy tool in our shop. We can press wet sleeves into an engine while it is in the truck. We can install sleeves in half the time it takes at the press. It is also used when putting in a single sleeve with the engine in the truck.

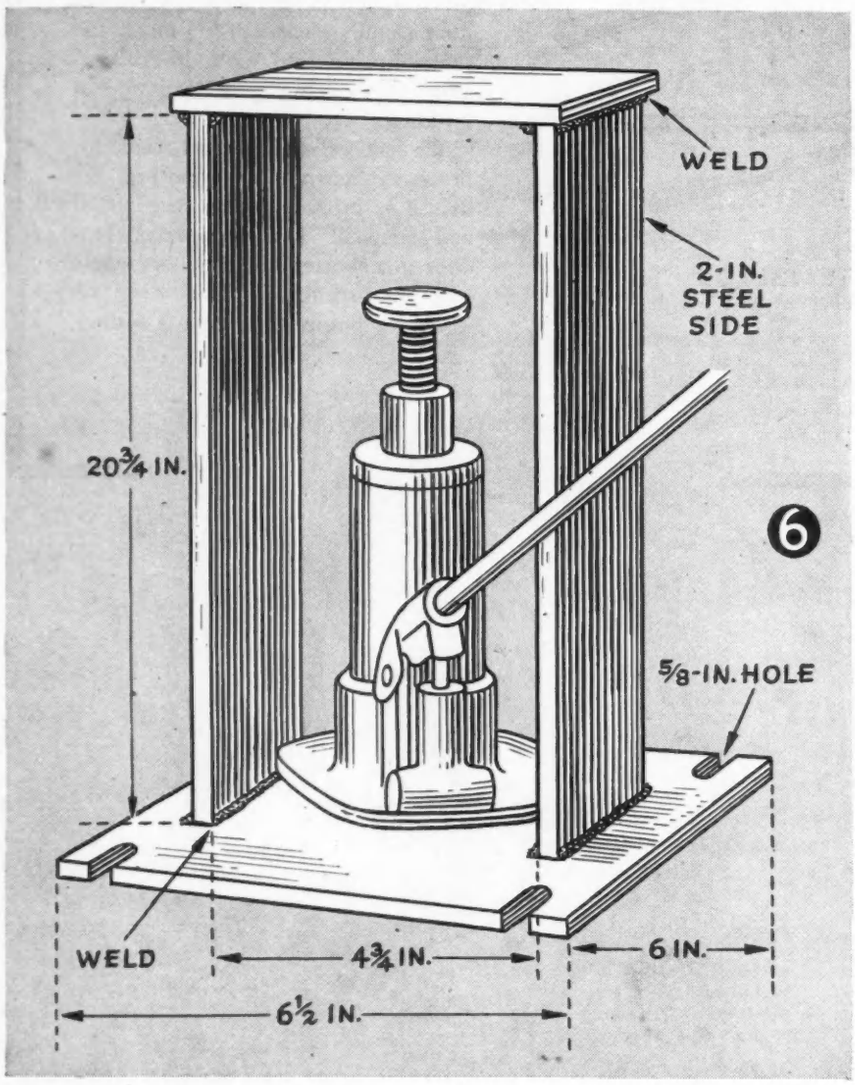
The press consists of a regular hydraulic jack set into a steel frame welded together as shown in the drawing. The base is a piece of ⅝-in. sheet steel 6 in. square. It has slotted holes (⅝) drilled in four corners as shown. They are made 3⅞ and 4⅝ in. from center to center. (This fits White trucks, WA 710 and 712).

(TURN TO NEXT PAGE, PLEASE)



Shop and Salvage Hints

(Continued from Page 49)



The uprights of the frame are of ⅝ in. sheet steel and are 20¾ in. long. A piece 6½ in. is welded across the top.

When they are welded together, this frame will fit over the cylinder. The slotted holes will fit the cap screws of the block. The frame is bolted to the block, the sleeve started into the cylinder and a flat piece of metal 4¼ in. in diameter is placed between the base of the jack and the top of the sleeve.

7. Engine Starting Tip

by Jean Babin
Shop Superintendent
Columbian Laundry, Newark, N. J.

We have found that quite a few of our trucks that were hard starting in cold weather had poor distributor grounds. When trucks are old, the advance mechanism wears so that the ground for the points is defective.

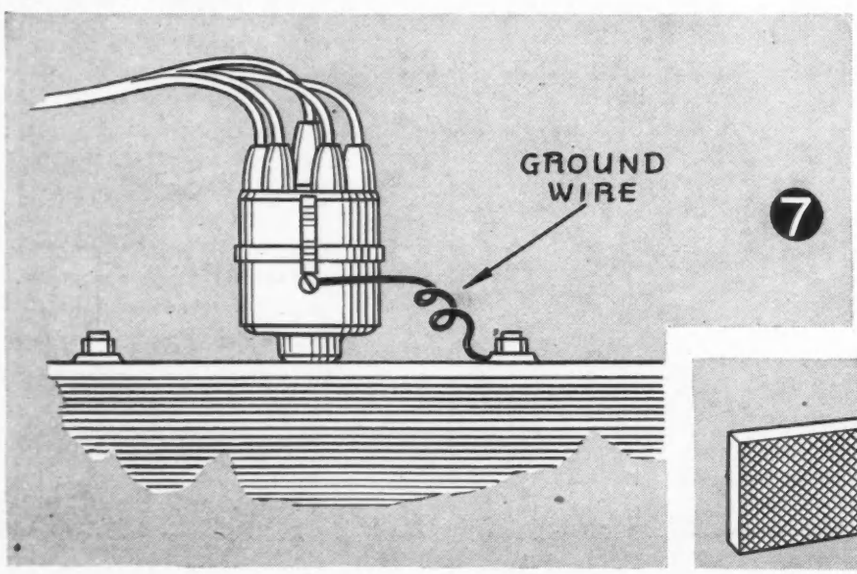
We overcome this by running a short No. 52 wire from the distributor housing to the cylinder head.

8. Home-Made Chisel

by Frank J. Krecek
Ford Sales, Bedford, Ohio

Here is an idea that works well in our shop. It is a sleeve cutter for Ford cars and trucks. We made it from an old file.

One end of the file is heated and cut off square. The other end is ground on an emery wheel to a crescent-shaped edge as shown in the diagram.

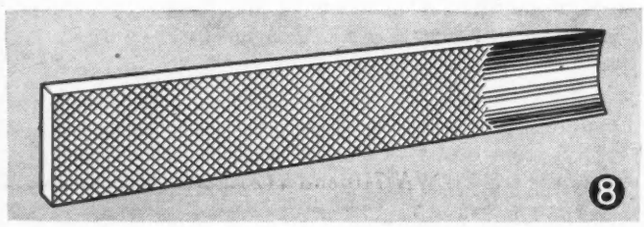


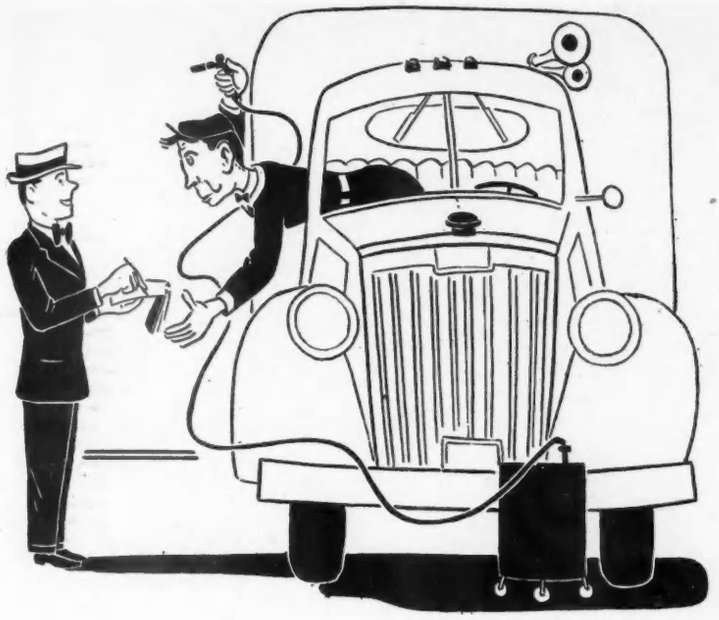
7. Fan Belt Replacement

by Jay Medley
Auto & Truck Alignment Service
Louisville, Ky.

I made several road runs as a mechanic to install fan belts on the K7, COE International truck until I hit upon the following system.

I suspend an extra belt from the top of the fan shaft cover. All the driver has to do is cut the rope and move the new belt into place. This saves removing the shaft, which most drivers cannot do.





MECHANICS

– as I Know Them

An Interview With

PETE R. O'LEUM

Editor's Note—CCJ, persevering in its efforts to find out what goes on behind shop doors asked its ace correspondent to interview Pete R. O'Leum, greasepert, on the subject of truck mechanics. After 40 lashes from the Editor he agreed to go—first putting on rubber boots and coveralls and leaving the address of his nearest of kin.

OUR REPORTER found Mr. O'Leum in the cab of a tractor. He had his favorite grease gun with him.

Reporter: "Mr. O'Leum, it's been said that wherever three mechanics gather together to work on a truck, a greaseman will appear among them, complete with gun and cord, light, and floor jack. Always being in the midst of them, you must know a lot about mechanics—those stout fellows who 'keep 'em rolling'. Tell us about them."

O'Leum: "Yes, indeedy. I've known a great many mechanics, and many mechanics will never forget me. They do keep them rolling, even if they have to push them outside the shop door. I know them well. . . . They are seekers—seekers after they know not what, but ever thirsting and moving onward from shop to shop with their collection of battered tool boxes, skinned knuckles, and a great command of strong, simple, English—early English, for they are the descendants of those tinkers of the Middle Ages, mechanics who roamed from hamlet to hamlet, with an occasional omelette, fixing things. They are ever welcome, even as today, as they bear their tool boxes from shop to shop.

"Take that guy over there, Joe Suitcase. He's a descendant of one of them. His name really means 'follow the box'—suit as in pursuit, and case, meaning box. So Joe follows his box in and out of shops. They can't stand to see a wheel idle. Everything must go round. It's a never-ending warfare of man versus bolts and nuts, and man's inhumanity to man as designers strive to put something on a vehicle that mechanics can't get at. It goes on and on, round and round—and so do the mechanics.

"This is the great problem of the trucking business. If this movement from shop to shop could be speeded up, more trucks would run. I think I have solved the problem with a



patented tool chest on wheels and with handles like a little hand truck, but with a unique forward and reverse ratchet arrangement which would permit the mechanic to apply brakes, reverse himself and return to the shop immediately should he cool off. Cute, eh? . . . Your mechanic is a true artist, full of . . . a . . . ah . . . a . . . shall we say temperament? Let's. . . . Take last week. A mechanic left here to go driving because by mistake he got his face over the cleaner hole in a spark plug cleaner."

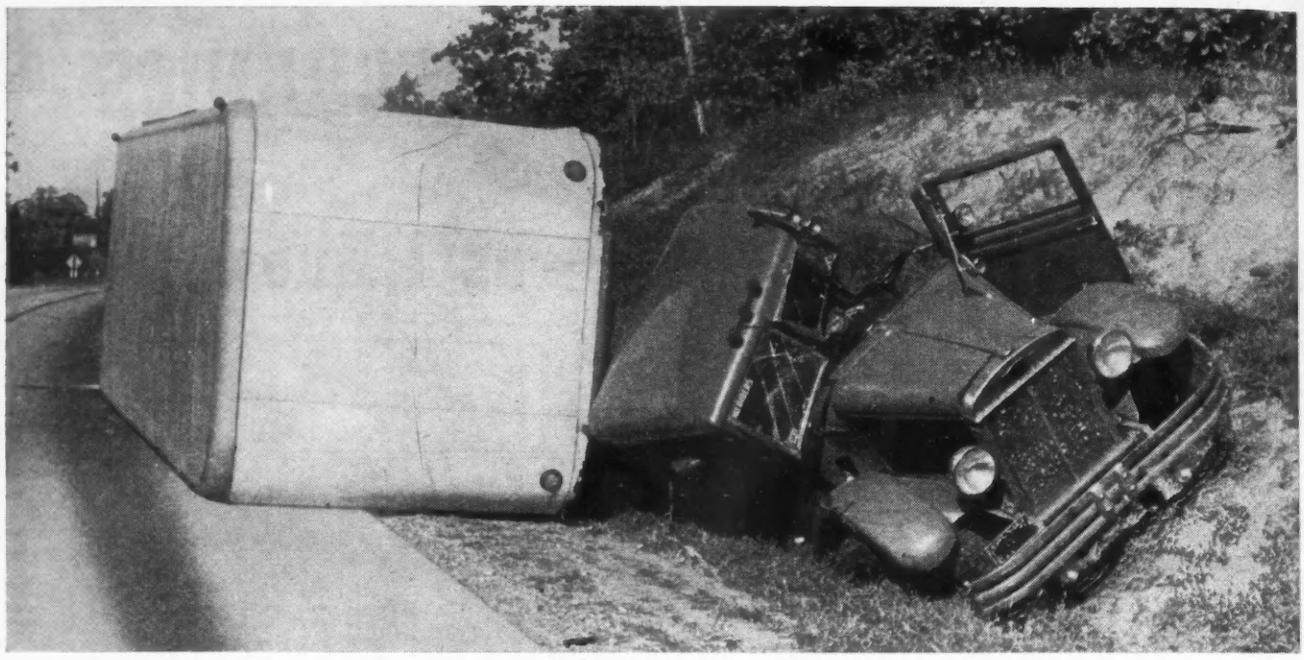
Reporter: "Are all mechanics so screw . . . I mean is there any difference between mechanics—say those who work on trucks and those who fix passenger cars?"

O'Leum: "As much as between dark and light, or pork and beans. Your passenger car mechanic is a finer creature, accustomed to lying on blankets on fenders, to plushy, perfumed car interiors, chromium and cigarette lighters. He knows nothing of plow wrenches, of hay wire, in which every truck mechanic is an expert. A truck mechanic can fashion things together so cunningly that even a big-eared driver listening for rattles is fooled.

"And your truck mechanic has a far wider vocal range and vocabulary—a song on his lips putting in a sealed beam or a tail light bulb, a gentle cooing on points and plugs, a commanding sternness with generators and fan belts and rising to vessel-bursting invective on compressors, drive lines, and spring bolts. You know bolts and nuts on tractors are vindictive, full of fight, and rusty offensiveness. But a truck mechanic expert in command of his early English, careful in his choice of words, can always find a word that will win the day.

"They tell of an old master mechanic who once had a two-speed rear

(TURN TO PAGE 126, PLEASE)



Driver Education Embraces Emergency Situations

Information for use in case of accidents placed in cabs. Complete driving instructions and trouble data will be supplied

by GEORGE W. ARNOLD
Superintendent of Maintenance,
The Borden Co., Inc., Oklahoma City, Okla.

THESE REALLY ARE $64 QUESTIONS

Whom to call—shop or office—to report an accident?

Whom to call for medical aid?

Less exciting but important, nevertheless: What to do when the starter jams? What caused it to jam? How to fix it?

How to start rolling on an icy road without skidding?

These are $64 questions—under emergency conditions, life itself may be the price. The management of this fleet will see to it that drivers know the answers.

A PART of our new setup described in the article "Fleet's New Shop Plans Set Stage for Efficiency" (CCJ, January, 1946), is the driver educational plan because it affects deliveries, preventive maintenance and the repair shop.

Essentially, our drivers are salesmen rather than truck drivers. They are sales-minded, sales-educated and the problems of mechanical operation of the truck need to be reduced to insure safe operation and so that the rest of his energy can be devoted to sales and customer service.

To that end we have made some suggestions which continually promote the idea of calling the garage when any kind of abnormal operation develops.

Data for Emergencies

IN THIS connection, we have inserted neatly printed cards in the cabs advising anyone concerned in the event of an accident, whom to call for repairs, whom to call for medical attention, what ambulance to call, and list the name of the driver, his route number and the number of his truck.

We consider this necessary because a driver involved in an accident may become excited and spend valuable time calling the wrong people. Too, a driver might be unconscious and this card would provide necessary in-

(TURN TO PAGE 123, PLEASE)



"DEFENSIVE DRIVER" DEFINED

A defensive driver is defined as "One who is careful to commit no driving errors himself, who makes allowance for the lack of skill or improper attitude on the part of the other fellow, and who does not allow hazards of weather and road conditions or the actions of pedestrians and other drivers to involve him in an accident.

"He keeps continually on the alert, recognizes an accident-producing situation far enough in advance to apply the necessary preventive action and concedes the right of way when necessary to prevent an accident."

Increasing Traffic Hazards Face Fleets in 1946

National driving spree, over-age vehicles and careless, inexpert drivers pose serious problems. "Defensive driving" urged

by RANDALL R. HOWARD

THE continuous upward trend in in motor vehicle accidents that has been occuring during the months since V-J Day in August of last year, seems to indicate that 1946 will be the most hazardous year, from the viewpoint of operating safety, that the commercial truckers of the nation have ever faced.

An analysis of this "upward trend" takes us back to the prewar year of 1941, which was the nation's peak year in motor vehicle registration, motor vehicle mileage, and also motor vehicle deaths. During 1941 nearly 35,000,000 registered trucks and passenger cars traveled an estimated 201,000,000,000 miles on our streets and highways—and nearly 40,000 persons were killed and 1,400,000 more injured in traffic accidents.

Then on December 7 of that year came Pearl Harbor—followed by the well-remembered restrictions which sharply cut all motor vehicle travel, distribution of new trucks and cars, use of gasoline, supply of new tires, speed of driving, and total mileage allowances.

The cut in motor vehicle mileage brought a cut also in accidents—a drop from the nearly 40,000 deaths in 1941 to 28,300 in 1942, and 23,800 in 1943. In 1944 there was a slight upward recovery in mileage, and auto deaths also advanced to 24,300. Following V-E Day early in 1945 there was some lessening in travel restrictions, which was reflected by motor vehicle accident increases during the first 7½ months of the year.

Then on Aug. 15, 1945, came V-J Day, supplemented by the dropping of all gasoline restrictions—which signalled the jump-off into the present national "driving spree."

Safety Leader Concerned

SOON after V-J Day, the national concern over the situation was voiced by some of the safety leaders.

(TURN TO PAGE 157 PLEASE)

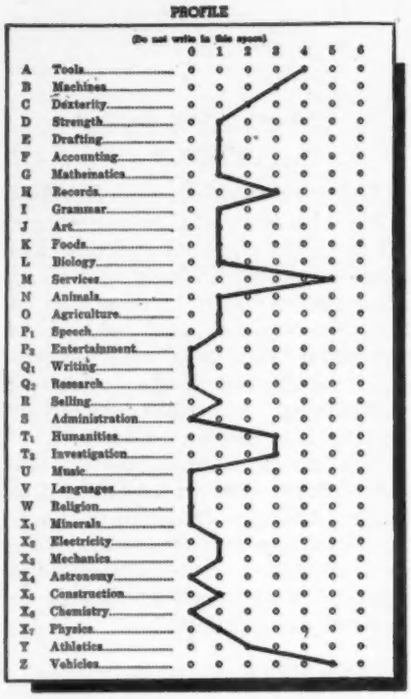


Fig. 1. Profile of a safe driver. Appreciable divergence in any of the essential characteristics points to accident-prone drivers

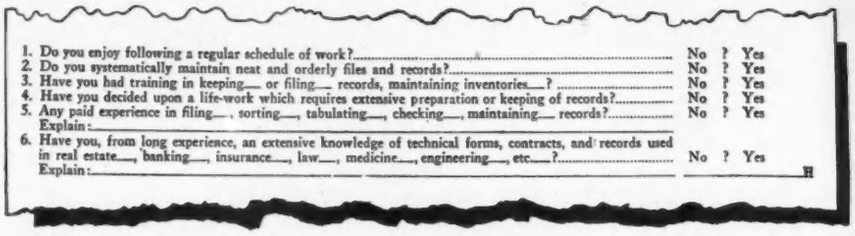

1. Do you enjoy following a regular schedule of work? ... No ? Yes
2. Do you systematically maintain neat and orderly files and records? ... No ? Yes
3. Have you had training in keeping ___ or filing ___ records, maintaining inventories ___? ... No ? Yes
4. Have you decided upon a life-work which requires extensive preparation or keeping of records? ... No ? Yes
5. Any paid experience in filing ___, sorting ___, tabulating ___, checking ___, maintaining ___ records? ... No ? Yes
   Explain:
6. Have you, from long experience, an extensive knowledge of technical forms, contracts, and records used in real estate ___, banking ___, insurance ___, law ___, medicine ___, engineering ___, etc. ___? ... No ? Yes
   Explain:

Fig. 2. A specimen of the questions that drivers and prospective drivers are asked on the Job Qualification Inventory. The above set, seemingly irrelevant, has a definite place in the overall picture of a man's natural inclinations

PROFILE TELLS THE STORY

"Safe drivers, it was found, tended to be as like as peas in a pod, in so far as their responses to the Inventory were concerned.

"The picture was entirely different when it came to the accident-prone drivers. Either a lower level of response in the same occupational fields in which the good driver was high, or a higher level of response in the remaining fields in which the safe operator was low, made the accident rate shoot up."

Selecting Safe Drivers Before Employment

Job Qualification Inventory, which investigates six aspects of a driver's fitness, segregates safe from accident-prone types

by KEITH VAN ALLYN

Executive Director, National Institute of Vocational Research, Inc., Los Angeles, Cal.

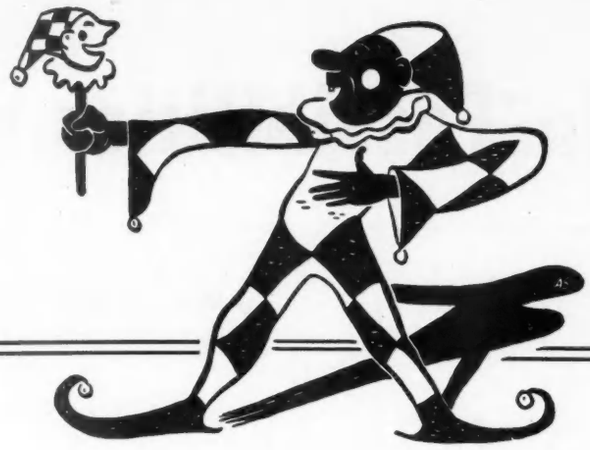
FOUR Los Angeles bus companies have developed a method for detecting accident-prone drivers before hiring, which owners of truck fleets will undoubtedly be able to apply to their own problems in the near future.

Under the leadership of the Greater Los Angeles Safety Council, various industries in the Los Angeles area are tackling all aspects of the accident problem. Last May, the Council appointed numerous committees composed of responsible representatives of the trucking, taxi, and public transportation industries to investigate vehicular accidents from several viewpoints. The reports are beginning to come in now, and a recently completed study by the Job Analysis Committee is of particular interest.

Because public transportation accidents represent a grave threat to public safety and receive the most notoriety, John B. Clark, Chairman of the Committee, and Transportation Director of the Creameries of America, Inc., decided to focus the Committee's attention and effort on the qualifications of safe coach operators of public transportation equipment. "We knew that bus accidents themselves represented only a portion of the total toll of the nation's or even only Los Angeles' automotive accidents," Clark says, "but we preferred to concentrate on this segment of the accident problem because the effect of any ameliorative result produced would be most immediately felt by the public. The results of this work, however, are applicable to other related industries."

Being familiar with the problem before Clark's Committee and having

(TURN TO PAGE 116 PLEASE)



LAUGH IT OFF

with SKAG SHANNON

"Here is where I cut a good figure," might have said Sadie, the cashier, as she sat down on a broken bottle.

C C J

Says our Office Manager—"Higher education for women is futile. If they are pretty it's unnecessary; if they are not it's inadequate."

C C J



Judge: "Do you mean to tell the jury that the defendant stole the money from your stocking?"

Juke Joint Queen: "Yes, your honor."

Judge: "Why didn't you resist?"

Queenie: "How did I know he was after my money?"

C C J

If you dislike these jokes, their dryness makes you moan,
Just send in, occasionally, some good ones of your own.

C C J

The city pick-up driver says he doesn't want any of them night clothes called pajamas. He ain't no social rounder. When night comes, he goes to bed.

C C J

Safety Director: "What did you do when her dress started coming off?"

Safety Agent: "I helped her out the best I could."

C C J



Terminal Manager: "I have a job here as Freight Handler which pays 80 cents an hour. With a job like this you can face the postwar world with a smile, stand up and be a man among men."

Job-Seeking Veteran: "Sir, I've been a man among men for three long years. What I crave now is a job where I can sit down and be a man among women."

C C J

Yancey the Yardman reported for duty with his head bandaged up like a "gouty" foot. The Dispatcher took one look at his woe-be-gone appearance and asked, "What meat chopper did you stick your head into?"

"Oh," said Yancey, "my old lady caught me hobnobbing with that atomic blonde again, and when I got home she really played hob with my nob."

C C J



Road Driver: "Didja hear about the trouble Joe Blow, the Fleety Fleet Express truckie, is involved in?"

City Driver: "No, what happened?"

R.D.: "He struck an old lady with his rig the other night when she jaywalked across "Horner's Corners", and now the old dame's husband is suing Fleety Fleet for $10,000."

C.D.: "Was she injured seriously?"

R.D.: "No, just skinned up a little, but as a result of the accident she recovered her voice after not being able to speak for 15 years."

C C J

Freight Claim Agent: "My wife tells me that almost every night she dreams that she is married to a millionaire."

Asst. F.C.A.: "You're darn lucky. Mine thinks that in the daytime."

C C J

Dispatcher (on phone): "Hello, what are you doing?"

"IF I HAD MY TIME OVER AGAIN," SAID ANNE, THE SPINSTER IN OUR INTERLINE DEPARTMENT, "I'D GET MARRIED BEFORE I HAD SENSE ENOUGH NOT TO."

C C J

Feminine voice: "Getting ready for church."

Dispatcher: "Wrong number."

C C J

THE PESTILENCE THAT FLIETH BY NIGHT, IS THE "COWBOY" WHO REFUSETH TO DIM HIS LIGHT.

C C J



Barber to Scotsman: "Would you like a nice close shave this morning, sir?"

Andrew: "Aye—an' ye needna be ower careful about the razor slippin', either, I finally managed a motor smash with a freight truck yesterday, an' I'm lodgin' ma claim this morning."

C C J

Oh, could I reach their inner minds,
And, from their awful blindness free them,
So dames in slacks, with fat behinds,
Might see themselves, then shed them!



Judge (sternly): "Why did you brutally assault the manager of the cafe?"

Pat the Dockman (wrathfully): "Sure an oi've been ateing his pie for six months, and last night the dentist told me oi had Pierea!"

C C J

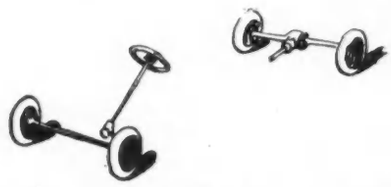
Fleet Operator (to Safety Class): "I've just been reading some accident statistics from the National Safety Council, and they are appalling—just think of it, every time I breathe a man dies."

Dopey Dave: "Gosh, boss, why don't you use listerine?"

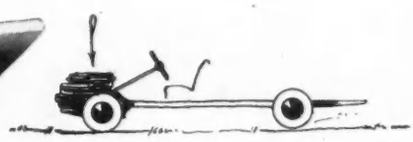
Possibilities and

by **WILLIAM B. STOUT***
Graham-Paige Motors Corp.





A MOTORCAR, as a vehicle, runs on four wheels, two of which drive. The driving wheels are operated by engine power but the steering is done by man power.



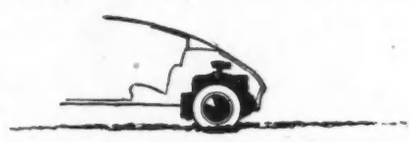
In present front-engined cars, if the chassis be run on the road without the body, there is not enough weight on the rear wheels to give them "push" enough on mud or hills to drive the car, or to absorb the horsepower of even a small engine. The body, therefore, must be heavy or the car cannot perform.

The most weight should obviously be over the wheels that have to push



the car; the least weight on the wheels which the driver's muscles must steer.

The more weight there can be over the driving wheels, the more traction, or push, or horsepower, you can get.



WHAT AUTOS COULD BE

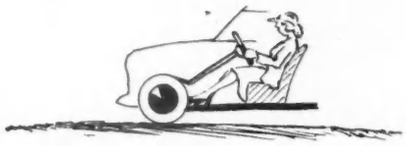
"IF the industry wants it, by 1947 they can have a car of Ford-Chevrolet-Plymouth size, with an over-sized super-Cadillac interior, double the standard of heat and sound insulation in the body, half the weight of standard cars, twice the economy of present day cars in driving, a visibility which does away with corner posts and their very definite danger, greater simplicity of servicing, less space required in shipping, less equipment required in production and at service points—in all as revolutionary an advance over present day cars as is the fluorescent light over tungsten . . . "

* Excerpts from S.A.E. Annual Meeting paper.

Probabilities in Automobile Design

New developments in valves, bearings, fuels, fuel injection will increase horsepower and up economy, while new light materials will permit larger, more comfortable bodies

The less weight you can put over the steering wheels, the less work the

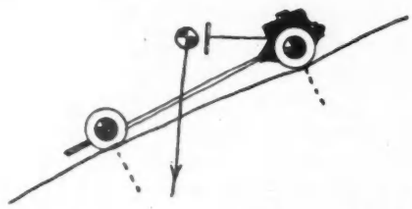


driver will have to do, particularly in emergencies.

In front engine types, when brakes are set on a hill or at high speed, the weight surges forward so

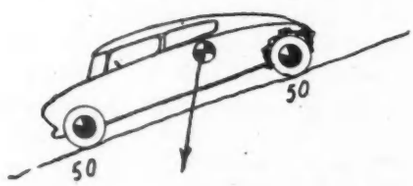


that rear brakes become almost useless. Going down hill, this car weight swings forward toward the front wheels—no rear brakes.



Going up hill, the car weight swings to the rear—the problem of front wheel drive.

In the rear-engined type, the weight swings forward on steep



grades or at high speed to equalize all braking loads for a new type of stability and control in emergency.

When the engine is in front, the driver himself must lift its whole weight side-ways, up and back-and-forth in order to steer the car—real



work requiring a high gear ratio on the steering wheel.

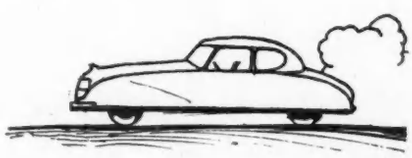
With the weight in back, not only is the steering effort far less, but the car steers quicker and with a





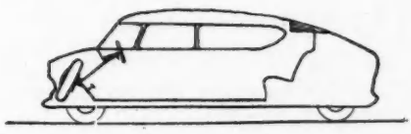
long leverage on the engine weight at the rear. A rear-engined car steers more like a bicycle.

Eighteen feet of body length in standard cars allow 6 ft. interior length for passengers. Cars 6 ft. 6 in. wide, allow 5 ft. width for seats.



There is no reason why the rear seat, at least, cannot extend the full width of the car, allowing a davenport or couch equipment 6 ft. 2 in. long within the interior width of the car. By putting this rear weight forward of the wheels, it can be extended the full interior width of the car.

The wheels also should be at the ends of the car for maximum wheelbase comfort. At the same time allowing the use of 30% more length of the car for passenger space. Present cars are 6 ft. 7 in. wide outside, but more than half of their length is taken up in machinery and useless space. There is every reason why



every bit of space the customer purchases should be used for his comfort. By utilizing this space in a car the same size as a Ford, Chevrolet or Plymouth, one can get almost double their interior space, 20% more wheelbase, lighter weight, through combined frame and body construction, leading, also, to much greater economy.

Drawing Room Interior

WHEN this extra space is made available, there is no reason why unheard of luxuries cannot be provided for a drawing room interior: Loose chairs, card table, couch or day-bed davenport, indirect lighting, forced ventilation, better heating, easier control, more legible instrumentation and so forth.

So much for the possibilities that can come out of the present day cars merely by different arrangement of weight, power application, and so forth.

During the war, and since our '42 production of cars, a lot of things have happened. A lot of techniques have been developed. A lot of new materials made available. So we can now add to what has just been given, the possibilities that can come from the use of these new things.

FREE PUBLICATIONS

USE THE POSTCARD—NO STAMP NEEDED

A selected list of the latest in literature—books, pamphlets, catalogs—chosen to help fleet operators solve maintenance and operating problems. Use free postcard.

L31. New Data on Sludge

A new 12-page publication on "Low Temperature Sludge in Automotive Gasoline Engines" has been made available to the fleet field. The information outlined on sludge formation supplements the previous studies, copies of which were offered in this department at an earlier date.

Much of this information has been obtained from laboratory tests which have been made during the war. Low temperature service conditions have been simulated in test engines and comprehensive data noted for the various conditions. Detailed tables and graphs give analyses of these tests and show the effect of corrective measures.

Fleet operators are accepting the responsibility imposed by the maintenance and control of mechanical and operating variables affecting this condition, and will appreciate the information outlined in this publication. Write L31 on the postcard for a copy.

L32. Truck Tire Manual

A revised truck tire manual containing 24 illustrated pages of vital information on "How to Get Extra Service out of ruck Tires" has been prepared in the interests of tire conservation.

This new manual is regarded by many as a "must" for all operators. Its nine sections add the modernization and amplification of tire maintenance practices to previously published information.

Covered by special sections are: Overloading, Over-Inflation, Under-Inflation, Effects of Speed, Starts and Stops, Temperature, Road Surfaces and other factors contributing to tire wear. Instructions for tube mounting and dual tire matching are also emphasized. And not to be overlooked is a comprehensive table on Truck Tire Load and Inflation.

Actual photographs of defective tire casings emphasize causes and effects of factors contributing to premature tire wear.

This comprehensive valuable booklet is available for the writing of L32 on the free postcard. Get a copy today.

L33. Engine Maintenance Book

Here is a publication that has proved its value to fleet operators. It is a 30-page engine maintenance booklet covering practical hints for maintenance and overhaul procedures.

Some of the maintenance suggestions that have proved of value to mechanics cover fuel tank and fuel pump servicing, carburetor overhaul and adjustment, valve inspection and grinding, manifold checks. The ignition system checks and adjustments are detailed and comprehensive. Spark plug cleaning and regapping is discussed in clear concise detail and the cleaning and servicing of cooling system and air cleaners is stressed.

Pleasingly illustrated with photographs and drawings supplementing these maintenance facts, the booklet should be an aid to every service man. He will want to check to see if this book is among his files, and if not, write L33 on the free postcard for a copy.

L34. Electrode Catalog

A new 32-page illustrated catalog on "Arc Welding Electrodes" has been published to guide welders in the selection of the right electrodes for any specific job.

This catalog supplies complete data on the proper electrodes to be used for for all types of work on a wide variety of base metals and describes the approved welding procedures for each operation.

Electrodes are recommended for use on mild steel, alloy steels, low alloy high tensile steel and stainless steels. Additional sections are devoted to electrodes designed for nonferrous metals such as aluminum bronze, aluminum and manganese bronze. Chemical analyses, specifications and other engineering data are supplied for each electrode.

Copies of the booklet are available to the fleet field. Write L34 on the free postcard for one.

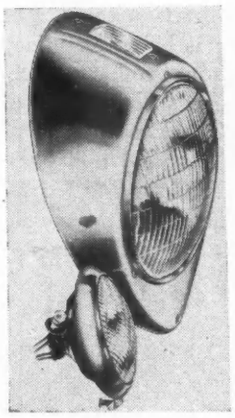
NEW PRODUCTS

USE THE POSTCARD—NO STAMP NEEDED

The newest in replacement parts, accessories, shop equipment and supplies. For more details of products described or advertised on these pages, use the accompanying free postcard.

P210. Sealed Beam Kit

A new Sealed Beam Conversion Kit to fit over 90 per cent of all pre-1940 model cars and trucks has been designed by Autopart Mfg. Co., Chicago.



Many new features have been incorporated in this sealed beam adapter to provide for convenient installation, maximum lighting efficiency, and long-lasting service.

The unit is furnished completely pre-assembled at the factory for ready installation. It has a built-in parking light with a press-fit socket, which makes possible the use of extra large parking light bulb for more light and safer parking.

The Autopart Sealed-Beam is laboratory tested and road tested. It is approved in all states.

Use Free Postcard For More Details.

P211. Rapid Solvent Cleaner

The Optimus Detergents Co., Matawan, N. J., has introduced a new solvent cleaner, Optimus Solvent No. 2. The product is said to be quick and effective in removing grease, oil, carbon, grit and miscellaneous shop dirt from metal parts.

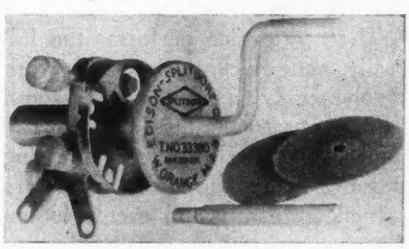
Originally developed for cleaning of parts to facilitate inspection, this new material is finding wide usage in other industrial cleaning operations. Proper solvent blending in the making of this new product provides versatility in the selective attacking of greases and dirts to be removed.

Use Free Postcard For More Details.

P212. Contact Resurfacing Tool

A new mechanical tool for resurfacing all types of contact points and screws used in magnetos, distributors, and other electrical units is now in production at Edison-Splitdorf Corp., West Orange, N. J.

The tool consists of two major parts—a holding ring and a revolving resurfacing plate. Old points are rigidly held in their proper holes in the holding ring by a holding screw.



The rotating resurfacing plate, equipped with a special abrasive disk, produces a clean, square point that insures good electrical contact.

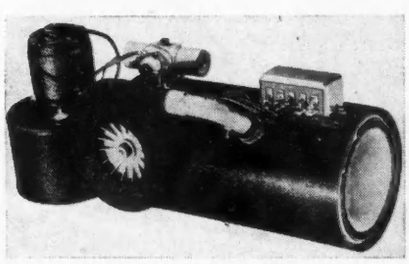
Each tool comes equipped with two feeler gages, two extra abrasive disks, and an electric-drill adapter that replaces the handle for power operation.

Small, simple, compact, this new tool should find a ready use in repair shops, service stations, garages, airports—wherever service is performed on automotive or other electrical units.

Use Free Postcard For More Details.

P213. Gasoline Heater

Stewart-Warner Corp. heater division has announced its first post-war automotive heater development, the "South Wind Deluxe Heater," for passenger cars, trucks or buses.



The new heater is said to provide quick heat output and air-conditioning and humidity control features. Among these features are rapid heating, introduction of a large volume of warmed, fresh air; draftless distribution of heat through ducts to concealed outlets in passenger or cargo space, and a unique modulating flow temperature control device which "anticipates" temperature changes and adjusts the heater operation to

(TURN TO NEXT PAGE, PLEASE)

NEW PRODUCTS

USE POSTCARD BETWEEN PAGES 58 & 59

(Continued from Page 59)

maintain pre-selected temperature in the vehicle.

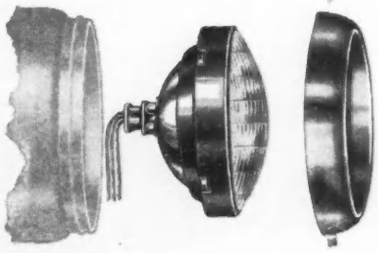
The gasoline-burning heater has maximum heat output of 20,000 B.t.u.'s per hour. Mounted under the hood and equipped with a blower which draws in cold, fresh air from a point just behind the radiator grille, the heater warms and delivers to the ducting system sufficient air to provide a complete air change within the space of the truck every 90 sec. or less.

The heater has no effect on engine performance. The fuel supply is taken from the gasoline line between the fuel pump and the carburetor, in normal installation. There is no connection to the manifold or to the engine cooling system.

Use Free Postcard For More Details.

P214. Sealed Beam Adapter Kit

The See-Mor Lamp Co., Cincinnati, Ohio, has developed a line of sealed beam headlight adapter kits for converting pre-1940 cars and trucks.



These adapter kits are manufactured of heavy gage steel—engineered for a tailor-made fit. The set includes one pair of adapters, one pair of sealed beam units, one pair of terminal connectors with three No. 14 wire leads on each, together with full instructions for mounting. Kits requiring trim rings, spacer rings or other necessary parts are so furnished.

The See-Mor units are guaranteed to assure maximum lighting efficiency for the life of the unit.

Use Free Postcard For More Details.

P215. Tire Demounting Tool

A new truck tire demounting unit that can separate the most tightly fitting tire from its rim with a force as great as 25,000 lb. has been developed by The Firestone Tire and Rubber Co.



Adjustable to truck tire rims 15 to 24 in. in diameter, the tool consists of a base on which the mounted tire is laid, and an 8 legged cast iron "spider" which beneath a three-armed jack hangs from a central screw shaft above. The spider, adjustable to different bead diameters, has curved, wedged feet with hinged "ankles" which act as levers against the tire bead.

The new device performs the job easily and quickly, since the work involves only a few simple steps. Fitted between the bead and the rim flange, the wedged feet, pressing downward as the jack arms are turned, gradually and evenly loosen the tire.

Use Free Postcard For More Details.

P216. Ignition Waterproofer

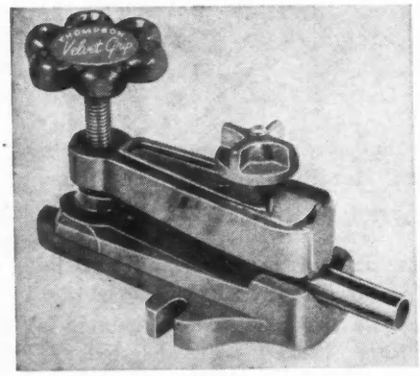
The Fire Extinguisher Division, of the General Detroit Corp., Detroit, announces the development of a new product, Wetstart, which is designed to make ignition systems waterproof, to restore and protect insulation on wiring, to retard battery corrosion, and to give from six months' to two years' protection with a single application.

The liquid insulation is applied by brush to the exposed ignition system wires and parts, including spark plugs, condenser, coil, distributor head, and battery posts, terminals, and carriers.

Use Free Postcard For More Details.

P217. Piston Pin Vise

A special "Velvet Grip" vise that holds piston pins, spindle bolts and other cylindrical parts without distortion or scuffing is being manufactured by Thompson Products, Inc., Cleveland, and soon will be stocked by the company's automotive parts distributors. The patented tool handles diameters from 3/8-in. to 1 5/8-in. and may be bolted to the bench or held in a standard machinists' vise.



A nut, at the front, adjusts the tool to the size of the piece while a partial turn of a larger hand-wheel at the back regulates the pressure and quickly clamps or releases. Only one setting is required for all pieces of similar diameter.

Use Free Postcard For More Details.

. . . NO STAMP NEEDED

P218. Overhead Spotlight

The overhead or "direct-control" spotlight by Ivalite is now available through the Arrow Safety Device Co., Mount Holly, N. J.

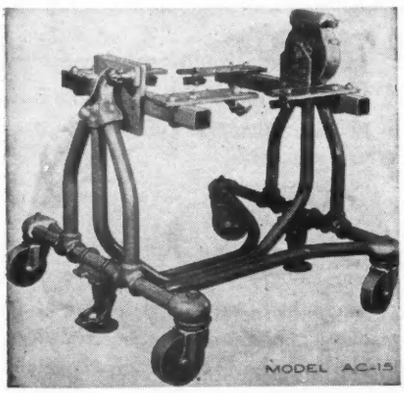
Designed for mounting through the roofs of vehicles, this chrome-finished unit can be operated by push-pull-turn control and throws a beam ½-mile long.

Use Free Postcard For More Details.

P219. Engine Overhaul Stand

The Clayborne Mfg. Co., Chicago, Ill., offers four models of engine overhaul stands which are said to reduce greatly the time and costs of handling engines down for rebuilding.

Model AC—15, illustrated, measures 40 x 40 3/4 in. high and has a roll-over clearance of 30 1/4 in. The stand is constructed of heavy carbon steel tubing. All fittings are carbon steel castings. It is equipped with four 6-in. ball bearing swivel casters and two floor locks.



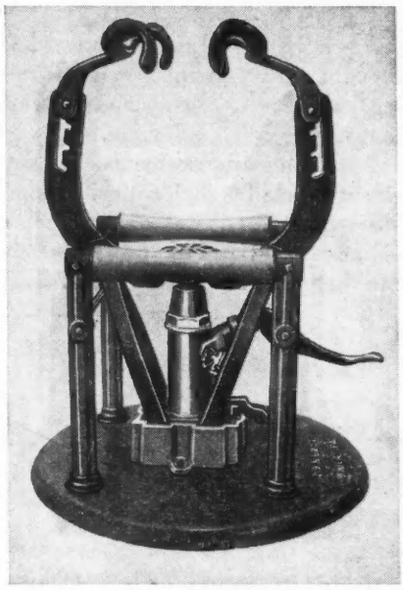
The engine can be rotated through 360 deg. by a worm gear mechanism operated by a crank. The worm gear drive is inclosed, positive and safe. An index plunger is provided to lock the engine in various positions if desired.

This engine stand handles the complete engine—including oil pan, bell housing and accessories. Every engine part is said to be accessible while the unit is mounted on the stand.

Use Free Postcard For More Details.

P220. Hydraulic Tire Spreader

A new hydraulic, foot-operated tire spreader has been developed by E. H. Stackhouse, Philadelphia, Pa. The device spreads tires 16 in. from bead to bead. It is equipped with specially designed forks and arms which insure a secure hold on the tire. An exclusive feature of the spreader is the fact that the ram of the hydraulic jack pushes the tire up so that the tube is easy of access. This same feature will force out tubes that have



been frozen in tires. The spreader is equipped with rollers to revolve the tire once it is spread.

There are two models available. One will handle all passenger car and truck tires up to 8.25. The second model will handle all passenger cars and truck tires up to 10.50.

This spreader is said to assure perfect control at all times and to eliminate danger of accidents caused by sudden jerks. Hydraulic operation is said to be quicker since it removes the necessity of waiting for sufficient air pressure to operate the spreader.

Use Free Postcard For More Details.

P221. 3-Ton Wrecking Crane

A new 3-ton wrecking crane has been developed by Manley Mfg. Division, American Chain and Cable Co., Inc., York, Pa. The crane weighs 320 lb., and can be mounted on any open truck. When not in use, it can be folded out of the way, and the truck can be used for other purposes. By removing two bolts, the entire wrecking crane swings back to the cab, making space for tires, batteries, tools or general service. When folded, it is low enough to go into an average garage door.

The entire mechanism is enclosed against dirt and bad weather. It is lubricated at the factory and needs no other attention. The main shaft runs on ball bearings for easy operation and high efficiency. The Tru-Lay, Preformed cable is completely enclosed in the boom and housing. A



free-working, full-swivel nose gives line pull from all directions.

The crane has a reduction of 100 to 1; width, 37 in.; length, 80⅛ in.; height, 54 in.

Use Free Postcard For More Details.

P222. Heavy Duty Signal Lights

The Teleoptic Co., Racine, Wis., is featuring four types of heavy duty lamps for efficient safety signal protection on both commercial and passenger vehicles.

These signal lights, which flash a direction warning before every turn of the vehicle, provide 180 deg. visibility 125 ft. day or night from front, rear or side. Three types of control are now available: finger-flip switch on end of gear shift lever, bracket switch mounted on steering column and instrument panel board switch (with or without pilot light).

Use Free Postcard For More Details.

P223. Drill Grinding Fixtures

The Industrial Mfg. Co., Cleveland, Ohio, has improved its line of Ind-L-Way Drill Grinding Fixtures. Available in two models, these fixtures handle all sizes of drills from ¼ in. to 2 7/8 in. in diameter and up to 26 in. long.

Use Free Postcard For More Details.



Factors Affecting

These excerpts from SAE papers on an

vails. Because of differences in fleets,

Speaking for a Public Utility . . . . . .

BROADLY speaking, when considering the retirement of vehicles, such retirements fall into two general classifications. These are:

1. Retirements due to vehicle obsolescence. In these cases, changed operating conditions have made the purchase of a new vehicle imperative, or, possibly, the manufacturer has brought out a new model incorporating sufficient improvements to warrant its immediate purchase.

2. Routine replacements of any given vehicle by an identical or similar type.

The first type of retirement is one that may be evaluated and handled relatively easily. It is forced retirement brought about by changing conditions.

It would appear that we are primarily concerned, in this discussion, with the second, or routine, type of retirement. Consideration of this class of retirement is compounded of many factors. Some of these factors are as follows:

1. Depreciation policy
2. Operating conditions
3. Maintenance policy

As Seen by a For-Hire Carrier . . . . . .

WE PROCEED on the theory that what depreciation is supposed to do for a piece of automotive or any other equipment is to write it off, so that when the vehicle is ready for replacement you have your original investment returned. If the method of depreciation is accurate, you will come out even. However, the operating conditions vary greatly and a depreciation method that would get you your money back from one operation would not necessarily suffice for another.

Our company is a sort of department store of trucking and we have all kinds of operations; city and country, low mileage and high mileage, easy and severe. We depreciate the truck, the tires, and the body, if detachable, separately and according to usage. We consider depreciation as a fixed weekly or yearly charge, based on a number of factors such as high maintenance after a certain mileage, obsolescence and so on.

Depreciation Committee

EVERY vehicle is judged on its own merits and the following procedure is used.

. . . and a Petroleum Producer

I WILL confine my remarks to that phase of the subject dealing with heavy-duty equipment, for the reason that our operation is predominantly in that classification group. With the exception of those lighter units as used in local delivery service, most of the hauling of our petroleum products is performed by trucks designed to utilize the maximum gross vehicle weight permitted in the various States where we operate.

Only Three Factors

IT HAS been our experience that, where such a fleet of trucks is operated on a preventive maintenance basis, there is little justification for replacement of equipment other than obsolescence, changes in state weight regulation where the truck operates, and accident.

Under the heading of obsolescence, consideration should be given to changes in marketing and distribution policies, changes in labor policies, highway improvements, inability of the operator to obtain repair parts and last, but not least, technical advances made in the automotive and petroleum industries. Any one of

Truck Depreciation and Retirement

important fleet problem again point up the variety of opinions and practices that pre-

it seems that an acceptable uniform method of retirement may be difficult to develop

4. Concentration of fleet, geographically
5. Market conditions for new and used vehicles
6. Mechanical condition of the vehicle

Let us consider briefly each of these factors.

Depreciation

THERE are two definitions of the word depreciate: One, "to lessen in value;" the other, "to disparage."



by DONALD K. WILSON
Superintendent of Automotive Equipment
New York Power and Light Corp.

I am afraid that our depreciation policy, in too many cases, becomes a disparagement policy. We all—personally, and as company representatives—have a natural, normal desire to operate new equipment.

Depreciation policies are usually based on past experience, subject to annual revision, and retirement is decided on a comparison of book values and repair costs for a group of similar vehicles.

(TURN TO NEXT PAGE, PLEASE)

Depreciation is set on every vehicle by a committee consisting of the treasurer, general manager (which is the Operating Department) and the head of the Maintenance Department.

Let's start with some small vehicles. If these are to be used around a city like Chicago for laundry work, etc., we estimate that the controlling factor, that is, the reason to get rid of the truck, will be high maintenance cost. It is our experience that high maintenance will set in on these vehi-



by H. L. WILLETT, Jr.
Vice President, The Willett Co.

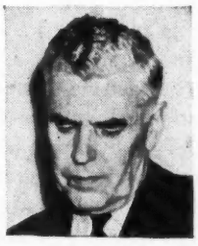
cles after 80,000 miles. These trucks run abount 50 miles per day or 300 miles per week, or 15,600 miles per year. Thus, supposing the original cost to be $1,000 without tires, and the residual value to be $100 without tires, we have $900 to be depreciated in five years, which is $3.46 per week.

Let us suppose that this same vehicle will be used at the rate of 75 miles per day, then it will have to be depreciated sooner. Three and one-half

(TURN TO NEXT PAGE, PLEASE)

these foregoing items could very easily give the operator sufficient justification for retiring a piece of equipment, whether it be old or relatively new.

Consolidation of operating points or growth in volume at an operating location will often be satisfied by installing larger units to replace a number of smaller units; in some cases, one large unit for two smaller ones. Retirement of equipment such as this can and is accomplished economically



by GAVIN W. LAURIE
Manager, Automotive Transportation
Atlantic Refining Co.

even though the equipment replaced may be of a rather late vintage, with relatively few operating miles on the odometer. This method of retirement may be in direct opposition to the retirement formula, and it is throught into the picture not as a condemnation of retirement procedures and formulas, but simply to indicate some of the ramifications that exist on the subject matter.

(TURN TO PAGE 178, PLEASE)

. . . TRUCK DEPRECIATION

(Continued from Page 63)

. . . Public Utility

At the moment, there is probably no better way of working out the problem. However, the annual revision of any depreciation policy should involve not only a consideration of the past year's performance, but an attempt to predict the future. This is a difficult matter.

The next three factors—Operating Conditions, Maintenance Policy and Concentration of Fleet—are so interdependent that it is almost impossible to discuss them separately. The weight that should be given to these factors varies, and must be evaluated by each transportation superintendent, in the light of his own peculiar conditions.

Market conditions likewise need no special comment, as the effect of a strong buyer's or seller's market on retirements is self-evident.

Mechanical Condition

THE most important factor of all is the last one listed—the mechanical condition of particular vehicle under consideration for retirement. What true basis have we for determination of its condition? Going back to our definition of depreciation as "disparagement," I am very much afraid that we are prone to look at the age and mileage of the vehicle and, if both are high, conclude that, per se, this vehicle should be the first to go.

Maintenance costs are also misleading, particularly these days. Work done by your senior mechanics on week-ends and holidays at double time and one-half can build up maintenance costs in a hurry. And, when it comes to a determination of the remaining life in a worn part, exactly what do we know? What are our wear standards, and on what kind of an experience factor are they based?

Before the war, necessary replacement parts, repair labor, and new trucks themselves, were relatively cheap. This condition no longer obtains. The economic life of a vehicle depends on an attempt to coordinate the economic life of its component parts. Today, more than ever, it is important to extent the life of these parts as far as safety permits, and to correctly evaluate their remaining life span, before retiring the vehicle.

Wear Standards Required

HOW do you obtain such actuarial tables? Some operators of large, concentrated, standardized fleets have been reasonably successful in developing their own maintenance standards. For the small, scattered or non-standardized fleet, compilation of such data is impossible.

We need much help from the manufacturers in this direction. How can you hope to develop a proper yardstick for mechanical condition as a clue to retirement, when wear standard information generally is so sadly lacking? Until maintenance, repair and parts replacement more closely approaches an exact science, how can you acquire a fool-proof vehicle retirement program?

Why do our vehicles cost so much to repair? Why is depreciation so high? The answer lies in the fact that in the "art and science of engineering" as applied to vehicle maintenance, there is entirely too much art and not enough science. Proper wear standards present a real challenge to the SAE T & M Activity.

. . . For-Hire Carrier

years would be about right and the residual value would be a little higher. Assuming the same $1,000 without tires and $175 residual value, we thus depreciate $825 in 3½ years. This gives us $4.54 per week.

I imagine that just about here somebody is getting ready to ask some questions about these residual values. Well, they naturally depend on a market which is fluctuating, but, we simply estimate them.

Over-the Road Operation

NEXT, let us take a more complicated problem. Say, that a tractor is operating two shifts with a trailer, the combination going 250 miles per day. On some vehicles in this work, we estimate 250,000 miles as the useful life of the tractor before the maintenance becomes prohibitive and five years for the trailer with no reference to mileage on this unit.

Thus, we would depreciate the tractor in 3 1/3 years and the trailer in 5 years, with a cost for tractor of $4,500 plus tires and a residual value of $350. The tractor would then be $23.99 per week. If we assume the cost of the trailer at $3,000 plus tires, the depreciation would be $15.40 per week. This gives us a total for the combination unit of $39.39 per week. The highest mileage we use in depreciation is 400,000 on some special vehicles. Due to wartime lack of replacements we have run a number of vehicles considerably in excess of this figure, and, from a maintenance standpoint, are very sorry for it.

Stop-Start Operation

LET us now consider the short mileage vehicles, such as a truck running a many stop, short route, such as a milk truck. At 20 miles per day, 7 days per week, this truck would go only about 7300 miles per year. Obviously, this truck isn't going to wear out due to mileage. In ten years it would only go 73,000 miles. We would use 6½ years depreciation on this. Assuming that the vehicle cost $1,000 without tires and had a $50 residual value, the depreciation would be $2.84 per week.

A summary of the above cases shows how widely varied are the methods of depreciation.

On a panel truck we depreciate two vehicles at 80,000 miles; one in 3½ years and one in 5 years. One at $3.46 per week and one at $4.54.

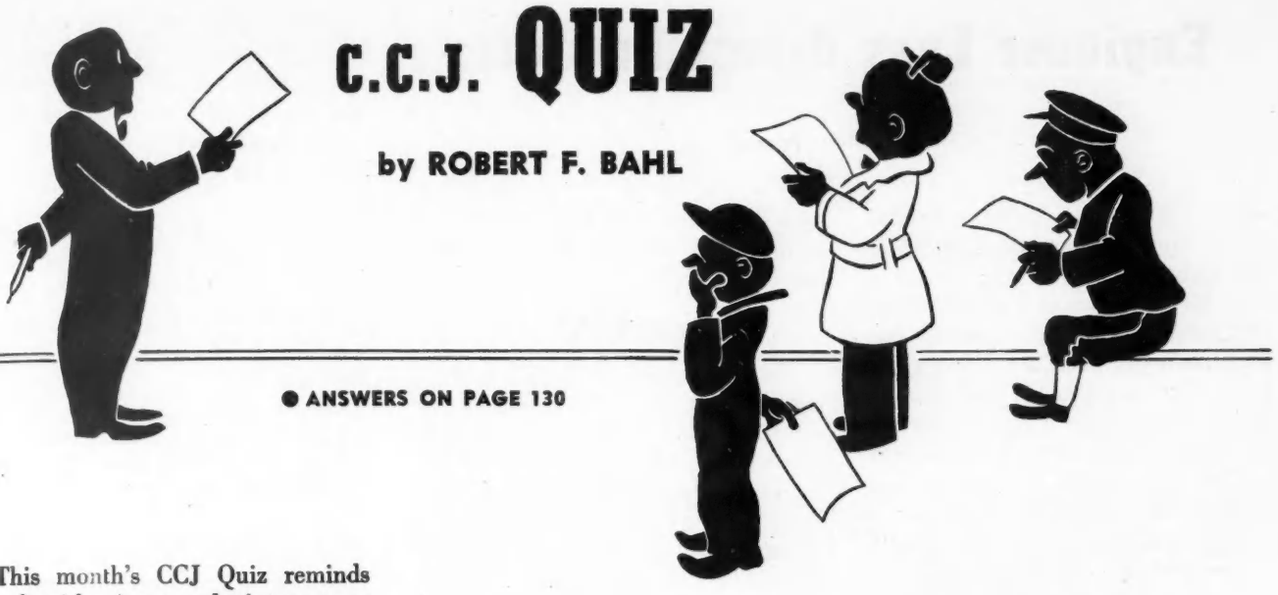
On our milk truck we throw the mileage factor out and simply say 6½ years is the depreciation time. This shows $2.84 per week.

On another vehicle we use 250,000 miles as contrasted with 80,000 miles and do not use a mileage factor on the trailer. This shows $39.39 per week.

Our only conclusion is that each job must be treated separately. Our depreciation factors are all estimates but we must have the best thought of the treasurer, operating department and maintenance department on each job to make these estimates.

C.C.J. QUIZ

by ROBERT F. BAHL



● ANSWERS ON PAGE 130

This month's CCJ Quiz reminds you that it's winter, and winter means special cold weather precautions in operating your trucks. Each question counts ten points. Check the answers on page 130, and then see how you rate on this chart.

50—You're lukewarm.
60—You can skip the topcoat.
70—Nice and cozy, isn't it?
80—Warm as toast.
90—Coming to a boil.
100—Brother, you're really hot.

1.

You wouldn't have to take any precautions for winter if the temperature never dropped below—

a. —10 deg. Fehr.
b. 0 deg. Fahr.
c. 10 deg. Fahr.
d. 32 deg. Fahr.

2.

If your trucks pass through this state, you had better be well protected, because it has the coldest winters of any state in the Union.

a. Maine
b. North Dakota
c. Michigan
d. Washington

3.

Which of these in a 40 per cent solution will give you protection against freezing at the lowest temperature?

a. Methyl (wood) alcohol
b. Ethyl (denatured) alcohol
c. Glycerine
d. Ethylene glycol

4.

Don't let this one put the skids under you. If your truck is skidding, which of these will help most in recovering?

a. Steer in the direction the front end is skidding.
b. Steer in the direction the rear end is skidding
c. Disengage the clutch
d. Apply the brakes with a pumping action

5.

If you're using wood alcohol as an anti-freeze, it would be wise for you to know that it starts boiling at . . .

a. 100 deg. Fahr.
b. 148 deg. Fahr.
c. 209 deg. Fahr.
d. 212 deg. Fahr.

6.

You'll get better traction and your tires will last longer if you apply your chains . . .

a. Snugly, so they cannot slip
b. Slightly on the loose side
c. It makes no difference as long as tires are fully inflated

7.

As the weather gets colder, you need an oil that has . . .

a. A lower SAE number
b. A higher SAE number

8.

You'll never be behind the eight-ball if you remember that a battery is most likely to freeze when it is . . .

a. Fully charged
b. Run down

9.

Old Man Winter is a star salesman for these manufacturers. Can you match up what he sells for each company?

1. Baker Mfg. Co.
2. E. I. duPont de Nemours & Co.
3. Highway Safety Appliances, Inc.
4. Pyrene Mfg. Co.

a. Anti-freeze
b. Chains
c. Electric sanders
d. Snow plows

10.

This last question is divided into 10 statements, some of them correct and some incorrect. Mark them true or false, scoring one point each time you choose the right answer.

a. Zero deg. on the Fahrenheit scale and zero deg. on the Centigrade scale are the same thing. True or False?

b. About 25 per cent of all auto accidents occur in bad weather. True or False?

c. When starting a car in snow it is advisable to use second or high gear. True or False?

d. In deep snow, spinning the wheels fast will get a truck out of a rut. True or False?

e. Calcium chloride, used to melt ice and snow on streets, is harmful to chrome plating. True or False?

f. Ethylene glycol is known as permanent anti-freeze. True or False?

g. Batteries are more efficient in cold weather than in warm weather. True or False?

h. Fog is composed of tiny drops of water. True or False?

i. When only single chains are provided for dual-tired wheels, they should be put on the outside wheels. True or False?

j. One of the objections to kerosene as an anti-freeze is that it causes rubber hose to deteriorate. True or False?

Engineer Eyes Driver Comfort

(Continued from Page 47)

senger car users have somewhat standardized on approximately 28-in. safety glass.

5. On the matter of seating, I think that here is where the greatest improvement can come for driver comfort. As we all know, the average seat that goes into a truck does not cost more than between $13 and $16.

There are several methods of suspending unit seats that will give a comfortable ride. The type that I have had the best results with are the unit seats, wherein the seat cushion and the back move in unison with the body, and suspended either with small shock absorbing elements or rubber and with proper construction of the seat and back proper.

6. The cab is mounted on a three-point suspension to be flexible, as it should be to meet the rough terrain, but the steering gear assembly is rigidly fixed to the main frame. The column of the gear is then rigidly supported to the flexing cab and subjected to an effective breakdown test of the steering gear. I feel that the steering column in most cases should be rigidly supported on the same main frame on which the steering gear is mounted free from cab action.

7. In the matter of ventilation, I think there is a very great need for defrosting methods on the side windows of the cab, and for no-draft ventilation on the side windows.

8. Some of us who have driven trucks at long intervals will readily appreciate the necessity of proper door closures, rubber seals and proper fitting doors.

9. Another item that I feel has been completely overlooked in most trucks is the uneven balance of the brake and clutch pedal pressures. I have seen instances where brake pressures were approximately 15 lb. and clutch pressures 80 or 90 lb. This condition can be corrected today, so that the pressures are somewhat equal.

Another important step to be taken, especially for the driver who operates within the cities proper and does a lot of starting and stopping and curbing of his vehicle for deliveries, is to provide effective power steering mechanisms.

COMMENTS

HAYNES, U. S. Rubber Co., provided a comprehensive outline of the developments in foam rubber seat construction suitable for commercial vehicles. He showed that modern foam rubber lends itself to complete controlability for riding comfort by means for varying its resistance to compression and by the design of the coring. A variety of types and forms of foam rubber cushions were illustrated and a recommendation was made for the use of full width cushions for postwar vehicles.

ARTHUR BOOR, Monroe Auto Equipment Co., described the features of the latest type of truck seat developed and produced by his organization. This seat features independent suspension with a variable rate spring supporting the seat and controlled by an automotive type shock absorber. The Monroe seat is said not only to give better riding comfort, free from effects of road shock, but to provide improvement in posture as well.

T. L. HIBBARD, Ford Motor Co., agreed that improvement in driver comfort presents a challenge to the vehicle designer. He cautioned that some of the ideal features are hardly possible of realization in light commercial vehicles owing to price competition and the demand for low price; also because of the size limitations of the standard cab. He was in favor of an independently-sprung seat as one contribution to comfort. He agreed with the speaker as to the desirability of better insulation against noise and weather and the adoption of a ventilating system. He is for providing larger steering wheels to reduce manual effort. So far as the windshield is concerned, Hibbard suggested the use of a sun visor to reduce glare.

STEWART, Mack Mfg. Corp., agreed in principle with the need for everything that can make for driver comfort and added a number of points to these listed by the speaker, including a review of the entire vehicle suspension system. Commenting on the various points made by Quartullo, he felt that, in the main, they did not constitute serious problems.

Unlike the other discussers Stewart held out for a driver's seat mounted rigidly with the cab. So far as power steering is concerned, he questioned whether present cost of such equipment was in keeping with what the customer is willing to pay for the vehicle. Although Stewart was strong for anything that will contribute to improved comfort and safety, he cautioned that whatever is done must be judged from the standpoint that heavy duty vehicles must be capable of giving about 500,000 miles of service without replacement.

J. W. DIEDERICH, General Motors Corp., appeared to be in general agreement with the speaker's program for improving comfort and safety.

From the viewpoint of his organization, vision is a vital requirement and should be capable of improvement. He was among others who said that the size of the windshield opening was not restricted by availability of glass since safety glass new can be produced in widths up to 40 in. He went further to inquire why it should not be possible to use double glass for the windshield and a good cab ventilation system to completely eliminate frosting of any glass in the cab.

Seating comfort is paramount in his opinion. One approach to this was the use of a folding arm rest on the right hand side of the seat in addition to the arm rest on the door.

L. T. KNOCKE, Dodge Div., Chrysler Corp., presented a few comments on comfortable seats, adding the thought that even passenger car seats still require further development. He also cautioned that the low priced commercial vehicles cannot stand the added cost of special comfort seats.

In summary, the consensus was that the comfort and safety of motor vehicle drivers was of paramount importance and deserved the attention of motor truck designers and producers. (Ed. Note—See the editorial in this issue.)

END

(Please resume your reading on p. 48)

Tires Are No. 1 Trailer Problem

At the closing session of the 5th Annual Meeting of the Truck-Trailer Mfrs. Assn., held on Jan. 28 and 29 at the Stevens Hotel in Chicago, a resolution was passed directing that a telegram be sent to the CPA, stating in part that "the major industry-wide problem of production of new trailers is scarcity of tires," and asking government aid to stimulate more rapid tire production.

"In numerous instances," stated the telegram, "these vehicles (trailers) have been completed in quantity with the exception of tires. Users are demanding this equipment, and highway transportation needs are not being served because of the tire shortage." It was also brought out that steel shortages, due to the strike, had entirely halted production in many trailer manufacturing units.

Reports emphasized the need of more uniformity among states in trailer electrical and lighting regulations; and chaos was reported among states in standards and fees for trailer "rated capacity." A program was reported under way to get more uniformity among manufacturers in the height of fifth wheels.

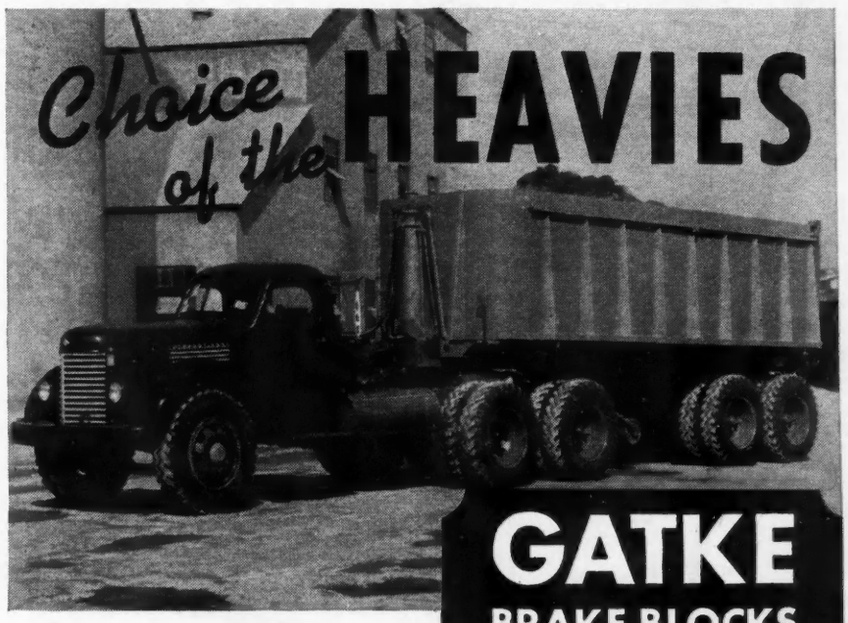
It was decided by motion to give more attention to trailer-use publicity. A general program to stimulate more favorable public attitude toward trucks was urged. Specific activities were suggested in an address by Richard T. Purdy, Manager, Motor Truck Div., Automobile Mfrs. Assn., on "Cooperation Between Truck and Trailer Manufacturers in the Postwar Period."

He urged "an intense program of long-range public education" on the vital importance of the trucking industry, through talks by leaders before groups, use of motion pictures, and especially through the use of display surface on trailers to carry slogans favorable to the industry. It was further urged that there should be closer coordination between the designers or engineers of roads and the designers of trucks and trailers, as preparation for the best use of the three billion dollar fund appropriated for national highway construction.

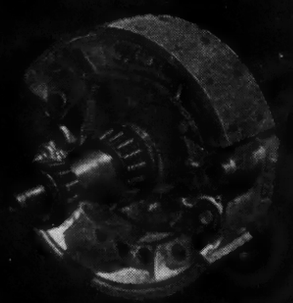
In the labor relations field, it was voted that a Committee be appointed to develop plans to keep in touch with outlets through which could be presented to the public "the views of the Association for the protection of American industry."

The newly elected Association officers are: President—J. L. Glick, Truck Engineering Corp., Cleveland; eastern vice-president—Charles E. Swingley, Trailmobile, Cincinnati; western vice-president—J. C. Bennett, Utility Trailer Mfg. Co., Los Angeles; secretary-manager—John B. Hulse, Washington; treasurer—N. A. Carter, Jr., Carter Mfg. Co., Memphis.

The newly elected directors are: Chairman—L. C. Allman, Fruehauf Trailer Co., Detroit; E. J. Lucas, Kingham Trailer Co., Louisville, Ky.; Harrison Rogers, Rogers Bros. Corp., Albion, Pa.; Frank Strick, Strick Co., Philadelphia, Pa.; C. A. Persinger, Wilson Trailer Co., Sioux City, Iowa; R. C. Tway, Jr., Kentucky Mfg. Corp., Louisville; L. A. Myers, Jr., Black Diamond Trailer Co., Inc., Bristol, Tenn.; B. P. Bates, Highway Trailer Co., Edgerton, Wis.



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Key Forms

EQUIPMENT REGISTER

EQUIP. NO. _____

Chassis Make Peterbilt Model 260BF Serial No. M135 Type Tractor Year 1940 No. Axles 3
No. Wheels 6 Weight 12760 State Licenses _____
Engine Make Cummins Model H6 Serial No. 18360

ENGINE
Generator type 1000
Starter type _____
Battery type and size 2 12-volt

TRANSMISSIONS, ETC.
Main—type, serial, ratio Brownlee 734 7.13
Aux.—type, serial, ratio _____
Front Diff.—type, size, ratio _____
Rear Diff.—type, size, ratio Jenkins 76796W
All Drive Lines—type, size, length F1034 R-34"

BRAKES
Drums—size and make 16 638
Diaphragms—size 9"
Lining—size 6x18 #4056
Length of Cams 19"

WHEELS
Make and size Budd 10 hole 22"
Tire size 1100 x 22
Front bearings and cone—make and No. Timken Cup 532 Cone 537
Middle bearings and cone—make and No. Cup 63W Cone 6379
Rear bearings and cone—make and No. Cup 749 Cone 749
Front hub—make and No. 1737 181
Middle hub—make and No. _____
Rear hub—make and No. _____
Front axle spring center _____
Front axle type No. _____

BODY
Make _____
Insulation—type and thickness _____
Side door _____
Mech. or brine reefer, and type _____

LINEAR DIMENSIONS

Truck or Tractor
Front bumper to towhook (or 5th wheel center) 15' 3"
Front axle to towhook (or 5th wheel center) 12' 9"
Wheelbase (front to rear axle) 13' 8"
Wheelbase of tandem axles _____

Trailer or Semi
Drawbar eye (or 5th wheel pin) to rear bumper _____
Drawbar eye (or 5th wheel pin) to rear axle _____
Wheelbase (front to rear axle) of full trailers _____
Wheelbase of tandem axles _____

SPRINGS

	No. Leaves	Lgth. Main	Width	Thickness
Front				
Middle				
Rear				
Overload				

BODY DIMENSIONS

Overall Height (ground to roof) _____

	Length	Width	Height	Capacity
Outside				XXXX
Inside				

MISC. axle B496 Lt. spindle
Lenses 501 01 2nd W413 T384

FORM NO. E 190 R 1

Fig. 1, left. Equipment Register Sheet, 8½ x 11 in., lists technical data for tractor and trailer. Speeds checking of information when parts are ordered or replaced. Below. Blackboard in shop office showing disposition of trucks



Form 168 MOTOR OVERHAUL RECORD

TRUCK NO. _____ DATE _____ COMPLETE FRAME OVERHAUL

MOTOR NO. _____
TIMING NO. _____
PISTONS _____
SLEEVES _____
THROWS _____
MAINS _____
RODS _____
CRANKSHAFT _____
CAMSHAFT _____
AIR COMPRESSOR _____
FUEL PUMP _____
HEADS _____

OTHER INFORMATION

Truck & Trailer
SERVICE RECORD

Equip. No. _____

(When checks are due)

REMARKS (special work to be done, etc.):

NO. JANUARY-JULY		FEBRUARY-AUGUST		MARCH-SEPTEMBER		APRIL-OCTOBER		MAY-NOVEMBER		JUNE-DECEMBER	
DATE	SPEEDOMETER READING	DATE	SPEEDOMETER READING	DATE	SPEEDOMETER READING	DATE	SPEEDOMETER READING	DATE	SPEEDOMETER READING	DATE	SPEEDOMETER READING

After each "P" check start "speedometer reading" at zero.
Enter all parts replacements on reverse side. Replace those shown January and July

Fig. 2, above. Motor Overhaul Record, 8½ x 11 in., lists engine specifications. Data can be obtained quickly from this sheet when replacement parts are installed or when engine is overhauled. Fig. 3, right. Truck and Trailer Service Record, 8½ x 11 in., shows when service is due on units. Lists date and speedometer reading for each check. Other side of sheet shown at extreme right, is a record of all parts which have been installed

Catch Failures, Speed Diesel PM

CONTROL SYSTEM INSURES SUCCESS

"Virtually all our repair tickets are written while the unit to be repaired is out on the road. This is real preventive maintenance when you can do the repair job before the breakdown occurs. Our records show that with close attention to details, it is possible and profitable.

"These forms make it possible to spot recurring failures and enable us to take the steps necessary to correct them, thus affecting considerable economy."

by H. E. LARSON
Superintendent of Maintenance
AND
E. B. OGDEN
Assistant Superintendent
Pacific Intermountain Express Co.
Salt Lake City, Utah

SINCE the war, we have inaugurated our Redball service, which offers a fast 4-day delivery between St. Louis and San Francisco and between St. Louis and Los Angeles. By use of advanced dispatching information, we are able to have power units serviced and waiting with drivers for quick interchange of tractors. This is most important in maintaining our Redball schedules.

Several points in our PM program and method of servicing our 95 Cummins Diesel power units and 125 semi-trailers differ from the common method of handling preventive maintenance, here in the Salt Lake City shop of Pacific Intermountain Express Co.

First, virtually all our repair tickets are written while the unit to be repaired is out on the road. This is real preventive maintenance when you can do the repair job before the break-down occurs—and that is what we try to do. Our records show that with close attention to certain details it is possible and profitable.

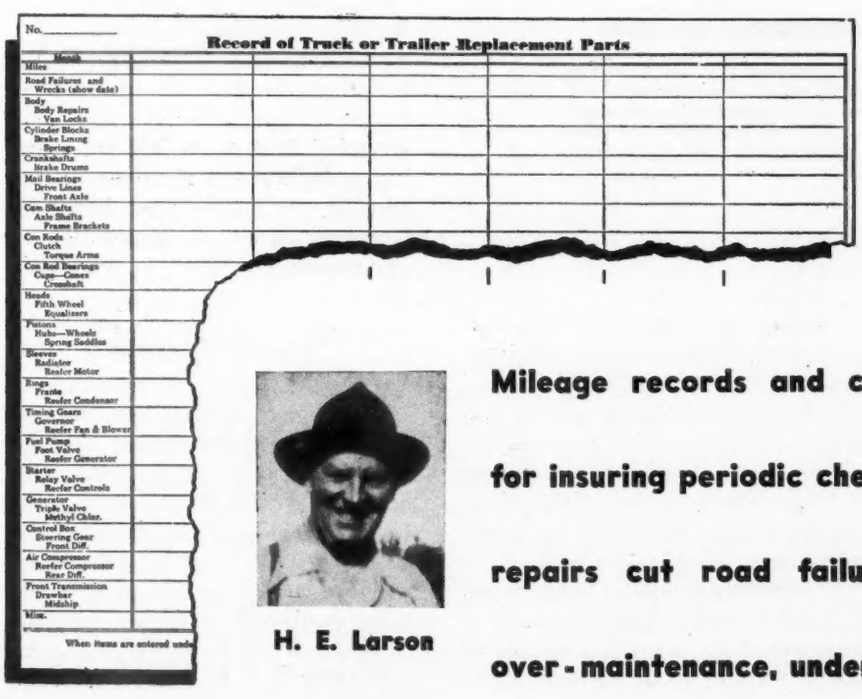
Second, no repair work is done on our service floor. The operations are restricted to service and the interchange of parts. We have assembled repair units in stock such as transmissions, rear ends, completely rebuilt engines and other items. Thus service operations, greasing and testing, is kept in that department and all orthadox repair work is done in the repair shop. This makes for economy in the long run because we have concentrated on providing the necessary tools in each department.

Control System Insures Success

TO COORDINATE the various phases of our program and to insure its success we have worked out a simple control system centered around certain records and shop forms.

We start with our equipment register, Fig. 1, which is a book that con-

(TURN TO NEXT PAGE, PLEASE)



No._____

Record of Truck or Trailer Replacement Parts

Month						
Miles						
Road Failures and Wrecks (show date)						
Body Body Repairs Van Locks						
Cylinder Blocks Brake Lining Springs						
Crankshafts Brake Drums						
Mail Bearings Drive Lines Front Axle						
Cam Shafts Axle Shafts Frame Brackets						
Con Rods Clutch Torque Arms						
Con Rod Bearings Cups—Cones Crankshaft						
Heads Fifth Wheel Equalizers						
Pistons Hubs—Wheels Spring Saddles						
Sleeves Radiator Reefer Motor						
Rings Frame Reefer Condenser						
Timing Gears Governor Reefer Fan & Blower						
Fuel Pump Foot Valve Reefer Generator						
Starter Relay Valve Reefer Controls						
Generator Triple Valve Methyl Chlor.						
Control Box Steering Gear Front Diff.						
Air Compressor Reefer Compressor Rear Diff.						
Front Transmission Drawbar Midship						
Misc.						

When items are entered under

H. E. Larson

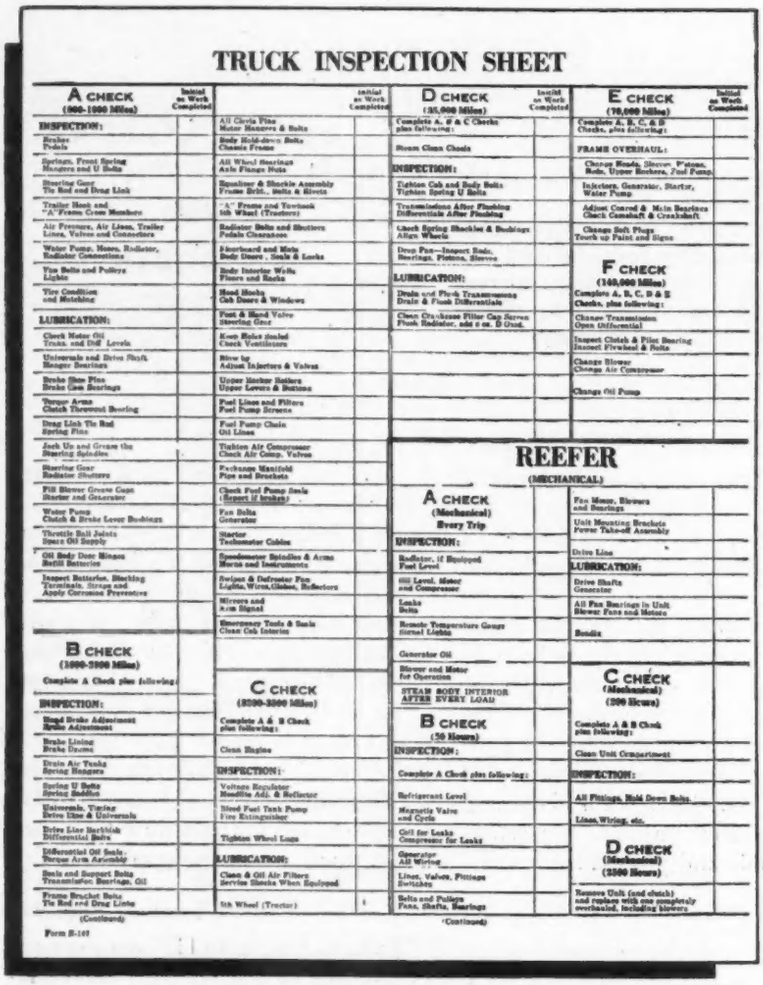
Mileage records and control system for insuring periodic checks and major repairs cut road failures, eliminate over-maintenance, under-maintenance



E. B. Ogden

Key Forms Catch Failures . . .

(Continued from Page 71)



TRUCK INSPECTION SHEET

A CHECK (800-1000 Miles)	Initial on Work Completed		Initial on Work Completed	D CHECK (35,000 Miles)	Initial on Work Completed	E CHECK (70,000 Miles)	Initial on Work Completed
INSPECTION:		All Chris Fins Motor Hangers & Bolts		Complete A, B & C Checks plus following:		Complete A, B, C, & D Checks, plus following:	
Brakes Pedals		Body Hold-down Bolts Chassis Frame		Steam Clean Chassis		FRAME OVERHAUL:	
Springs, Front Spring Hangers and U Bolts		All Wheel Bearings Axle Flange Nuts		INSPECTION:		Change Heads, Sleeves, Pistons, Rods, Upper Rockers, Fuel Pump	
Steering Gear Tie Rod and Drag Link		Equalizer & Shackle Assembly Frame Brkt., Bolts & Rivets		Tighten Cab and Body Bolts Tighten Spring U Bolts		Injectors, Generator, Starter, Water Pump	
Trailer Hook and "A" Frame Cross Members		"A" Frame and Turntable 5th Wheel (Tractor)		Transmissions After Flushing Differentials After Flushing		Adjust Conrod & Main Bearings Check Camshaft & Crankshaft	
Air Pressure, Air Lines, Trailer Lines, Valves and Connectors		Radiator Belts and Shutters Pedals Clearance		Check Spring Shackles & Bushings Align Wheels		Change Soft Plugs Touch up Paint and Signs	
Water Pump, Hoses, Radiator, Radiator Connections		Instrument and Main Body Doors, Seals & Locks		Drop Pan—Inspect Rods, Bearings, Pistons, Sleeves		F CHECK (140,000 Miles) Complete A, B, C, D & E Checks, plus following:	
Tire Bolts and Pulleys Lights		Body Interior Walls Floors and Racks		LUBRICATION:		Change Transmission Open Differential	
Tire Condition and Matching		Hood Hooks Cab Doors & Windows		Drain and Flush Transmission Drain & Flush Differentials		Inspect Clutch & Pilot Bearing Inspect Flywheel & Bolts	
LUBRICATION:		Foot & Hand Valve Steering Gear		Clean Crankcase Filler Cap Screen Flush Radiator, add 2 oz. D Dust.		Change Blower Change Air Compressor	
Clerk Motor Oil Trucks and Diff. Levels		Knee Holes Sealed Check Ventilators				Change Oil Pump	
Universals and Drive Shaft Hanger Bearings		Blow by Adjust Injectors & Valves					
Brake Shoe Pins Brake Cam Bearings		Upper Rocker Rollers Upper Levers & Buttons					
Torque Arms Clutch Throwout Bearing		Fuel Lines and Filters Fuel Pump Screens					
Drag Link Tie Rod Spring Pins		Fuel Pump Chain Oil Lines					
Jack Up and Grease the Steering Spindles		Tighten Air Compressor Check Air Comp. Valves		REEFER (MECHANICAL)			
Steering Gear Radiator Shutters		Exhaust Manifold Pipe and Brackets		A CHECK (Mechanical) Every Trip		Fan Motor, Blowers and Bearings	
Fill Blower Grease Cups Starter and Generator		Check Fuel Pump Seals (Inspect if leaks)				Unit Mounting Brackets Power Take-off Assembly	
Water Pump Clutch & Brake Lever Bushings		Fan Belts Generator		INSPECTION:		Drive Line	
Throttle Ball Joints Spare Oil Supply		Starter Tachometer Cables		Radiator, if Equipped Fuel Level		LUBRICATION:	
Oil Body Door Hinges Refill Batteries		Speedometer Spindles & Arms Marine and Instruments		Oil Level, Motor and Compressor		Drive Shafts Generator	
Inspect Batteries, Blocking Terminals, Straps and Apply Corrosion Preventive		Swipes & Defroster Fan Lights, Wires, Globes, Reflectors		Leaks Belts		All Fan Bearings in Unit Blower Fans and Motors	
		Mirrors and Arm Signal		Remote Temperature Gauge Normal Limits		Bendix	
		Emergency Tools & Seats Clean Cab Interior		Generator Oil			
B CHECK (1600-2000 Miles) Complete A Check plus following:				Blower and Motor for Operation		C CHECK (Mechanical) (200 Hours)	
INSPECTION:		C CHECK (3200-3500 Miles)		STEAM BODY INTERIOR AFTER EVERY LOAD		Complete A & B Check plus following:	
Hand Brake Adjustment Brake Adjustment		Complete A & B Check plus following:		B CHECK (50 Hours)		Clean Unit Compartment	
Brake Lining Brake Drums		Clean Engine		INSPECTION:		INSPECTION:	
Drain Air Tanks Spring Hangers		INSPECTION:		Complete A Check plus following:		All Fittings, Hold Down Bolts	
Spring U Bolts Spring Saddles		Voltage Regulator Needle Adj. & Reflector		Refrigerant Level		Lines, Wiring, etc.	
Universals, Tighten Drive Line & Universals		Bleed Fuel Tank Pump Fire Extinguisher		Magnetic Valve and Cycle		D CHECK (Mechanical) (1500 Hours)	
Drive Line Backlash Differential Bolts		Tighten Wheel Lugs		Oil for Leaks Compressor for Leaks			
Differential Oil Seals Torque Arm Assembly		LUBRICATION:		Generator All Wiring			
Seals and Support Bolts Transmission Bearings, Oil		Clean & Oil Air Filters Service Shocks When Equipped		Liner, Valve, Fittings Switches			
Frame Bracket Bolts Tie Rod and Drag Links		5th Wheel (Tractor)		Belts and Pulleys Fans, Shafts, Bearings		Remove Unit (and clutch) and replace with one completely overhauled, including sleeves	
(Continued)				(Continued)			

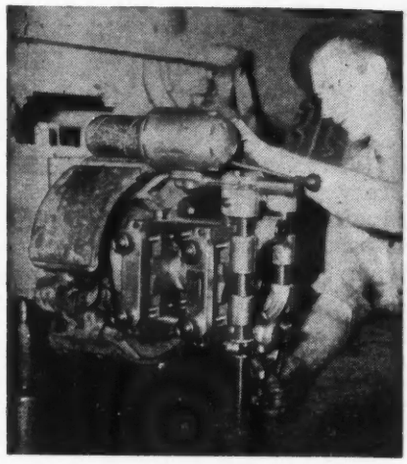
Form B-169

Fig. 4. Truck Inspection Sheet, 8½ x 11 in., is a record of A, B, C, D, E, F services on tractor and reefer. This master form takes place of more complicated check sheets. The reverse side of this sheet is used as a job ticket for truck and trailer repairs. Space is provided for driver complaints

tains the technical data on every tractor and trailer. Sheets are ruled for six month periods in which the mileage is accurately registered. There is also a sheet which indicates when certain maintenance work is due. Our shop clerk keeps these records up to date at all times. When a unit is due for an A check at 1000 miles and the unit has a speedometer reading of 800 miles and is out on a trip, a ticket is written up and when the unit comes in, the dispatcher sends it to the shop.

The equipment register is a permanent record and list of unit specifications. It shows chassis make, serial number, type, number of wheels, weight, states in which licensed, engine make, generator type, transmission specifications, brake lining sizes, bearing sizes and numbers and linear measurements.

This greatly facilitates repair work. For instance, if a transmission is to be replaced, the name and number of the part will be found by referring to



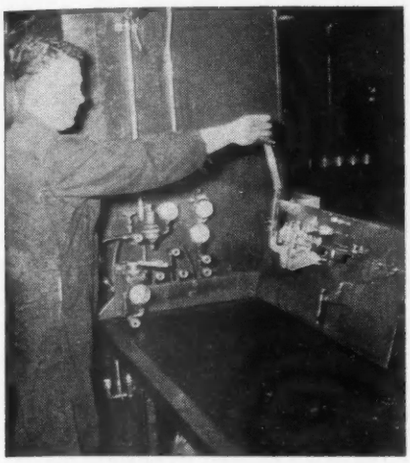
Mechanic using a portable contour machine by which new brake lining is ground to the contour of the drum

the equipment register. This part is then issued from the stockroom, and the replacement is made without having to refer to catalogs, notebooks or without having to try several kinds for sizes in order to get a fit. Nor is it necessary to remove the part to be replaced in order to compare it with one in stock.

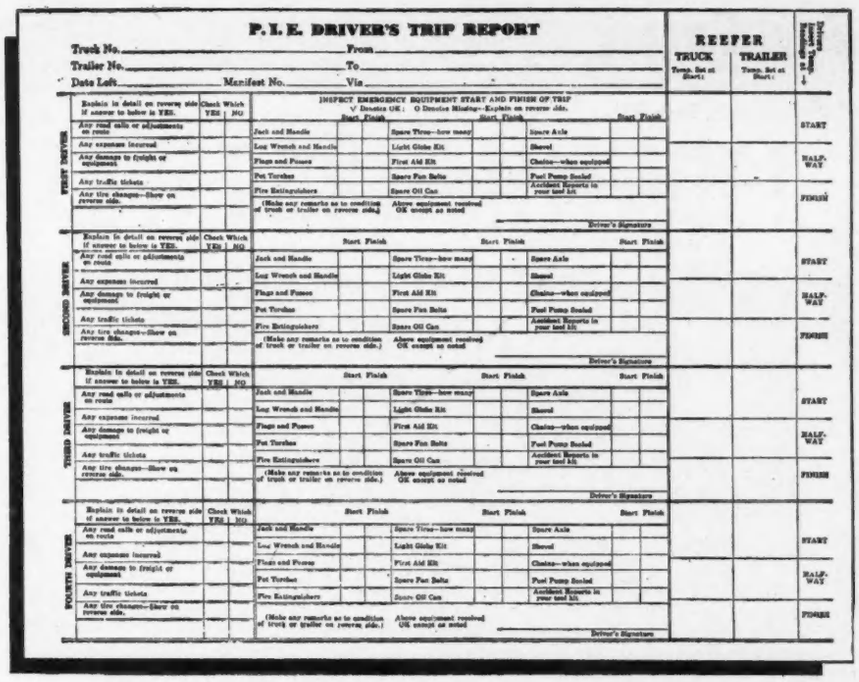
There is no engine data on this sheet, other than the make and model. When engine repairs are necessary, the equipment is turned over to the engine repair shop. However, when the engine goes into the engine shop for rebuilding, there is a sheet giving complete specifications of all parts in the engine plus timing information as well as information on all accessories. This is shown in Fig. 2.

The PM Program

WE HAVE our PM program set up in six divisions as follows: A check at 800-1000 miles; B check (which includes A), 1600-2000 miles; C check at 3200-3500 miles (which includes A & B); D check at 35,000 miles (which includes all previous checks); E check at 70,000 miles (which also includes previous checks); F check at 140,000 miles (including A. B. C. D and E checks).



Air valve testing department, where facilities are available for testing and repairing all valves on the unit



P. I. E. DRIVER'S TRIP REPORT

Truck No. _____ From _____
Trailer No. _____ To _____
Date Left _____ Manifest No. _____ Via _____

REEFER — TRUCK (Temp. Set at Start:) — TRAILER (Temp. Set at Start:)

INSPECT EMERGENCY EQUIPMENT START AND FINISH OF TRIP
√ Denotes OK; O Denotes Missing—Explain on reverse side.

FIRST DRIVER / SECOND DRIVER / THIRD DRIVER / FOURTH DRIVER

Explain in detail on reverse side if answer to below is YES. — Check Which YES | NO

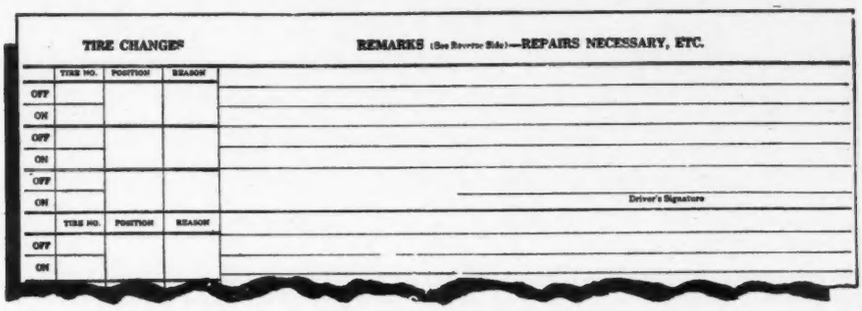
Any road calls or adjustments en route
Any expenses incurred
Any damage to freight or equipment
Any traffic tickets
Any tire changes—Show on reverse side.

Jack and Handle — Spare Tires—how many — Spare Axle
Lug Wrench and Handle — Light Globe Kit — Shovel
Flags and Fusees — First Aid Kit — Chains—when equipped
Pot Torches — Spare Fan Belts — Fuel Pump Sealed
Fire Extinguishers — Spare Oil Can — Accident Reports in your tool kit

(Make any remarks as to condition of truck or trailer on reverse side.) — Above equipment received OK except as noted

Driver's Signature

START / HALF-WAY / FINISH

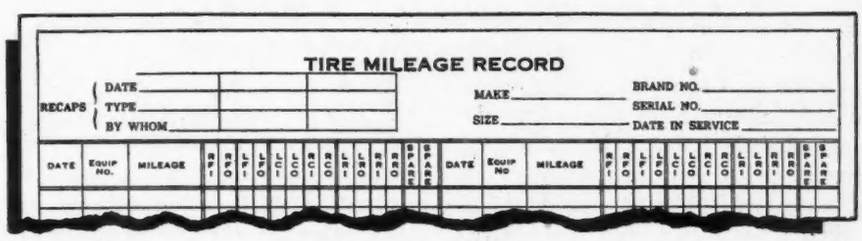


TIRE CHANGES — REMARKS (See Reverse Side)—REPAIRS NECESSARY, ETC.

	TIRE NO.	POSITION	REASON
OFF			
ON			
OFF			
ON			
OFF			
ON			

Driver's Signature

	TIRE NO.	POSITION	REASON
OFF			
ON			



TIRE MILEAGE RECORD

RECAPS: DATE / TYPE / BY WHOM

MAKE _____ BRAND NO. _____
SIZE _____ SERIAL NO. _____
DATE IN SERVICE _____

DATE	EQUIP NO.	MILEAGE	RFI	RFO	LFI	LFO	LCI	LCO	RCI	RCO	LRI	LRO	RRI	RRO	SPARE	SPARE	DATE	EQUIP NO	MILEAGE	RFI	RFO	LFI	LFO	LCI	LCO	RCI	RCO	LRI	LRO	RRI	RRO	SPARE	SPARE

Fig. 5, top. Driver's Trip Report, 8½ x 11., is a complete story of trip. Center. Reverse side of trip report shows record of any tire changes and position of tires on unit. Fig. 6, above. Tire Mileage Record, 8½ x 5½ in., is a record of all changes, mileages, dates, locations

The A, B and C checks running up to 3500 miles are more or less orthodox listings of things that must be done. They are initialed by the mechanic who has actually done the work.

The D check takes place at 35,000 miles and includes the three previous checks. The engine has been cleaned at all three checks. On the D check the chassis gets a complete steam cleaning. Transmissions and differentials are inspected after having been flushed. The engine pan is dropped for a visual inspection of rods, bearings, pistons and sleeves. The crank case filler cap screen is cleaned; the radiator is flushed and an anti-rust solution added.

The E check is at 70,000 miles. It calls for a complete frame overhaul. An engine change may be indicated at the E or F check, but usually at the F or 140,000 miles. On an E check, heads, sleeves, pistons, rods, upper rockers and fuel pump may be changed. Most of the engine changes are based on the condition of the crankshaft. If it is .004 or more out of round, the engine is changed and then goes through a complete rebuilding process in the engine department. Connecting rods, main bearings, cam shafts and crankshafts are checked at 70,000 miles. Soft plugs are also changed; paint and signs are touched up.

At the F check or 140,000 miles after all previous checks have been completed, the following is done: differential is opened up and inspected, clutch and pilot bearing, flywheel and bolts are inspected. The following are always changed: transmission, blower, air compressor, oil pump.

Thus it will be seen that at certain mileages certain units are changed. These changes are made on the service floor, and ample equipment is provided to make the changes simply. In the meantime, the units which have been taken out are put through a rebuilding process in the repair shop and sent to the stockroom.

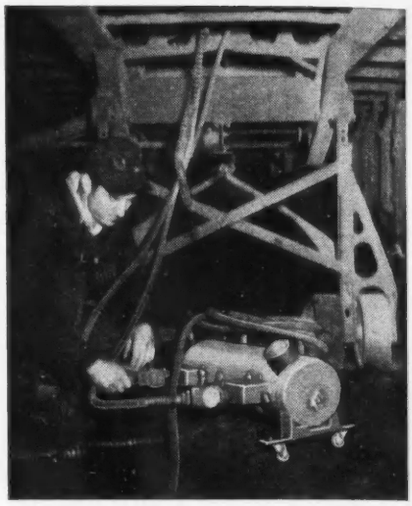
Driver Reponsibility

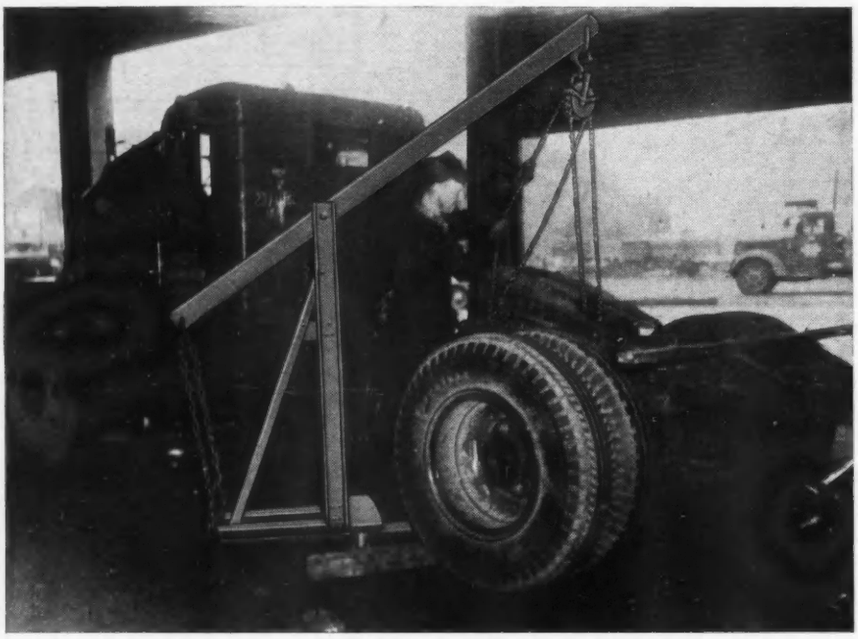
EACH truck is equipped with a speedometer, a tachometer and a tachograph. The tachometer gives

(TURN TO NEXT PAGE, PLEASE)

Key Forms . . .

(Continued from Page 73)





Left. Portable crane made in the PIE shops for changing parts in yard or on service floor. Supplements use of overhead cranes. Above. Testing trailer brakes with a PIE-made device that duplicates tractor air brake system

the driver engine r.p.m. and helps him in shifting gears through the mountains. The tachograph gives us a written record of the speed, the stops and the mileage. It can only be thrown out by disconnecting the drive cable. If a driver spends thirty minutes on a stop and then drives 50 miles per hour for the next two hours the chart indicates exactly what happened and the time of day or night, since it is hooked up with a clock.

The driver's trip report (Form No. 5) is a complete story of the trip. It lists truck or tractor number and trailer number. If it is a refrigerator unit, the driver has to check the temperature at certain designated intervals. Each sheet can be used by four drivers succeeding each other on the same unit. Or, in other words, over four divisions of our operation. The trip report is not only the driver's log for any given trip, but is a receipt from the driver for auxiliary equipment on the truck. Each answer requires a "yes" or "no" which we have found to be better than check marks. Each driver signs indicating that he has checked the emergency equipment at the beginning of his trip and at the end of his trip. His trip report requires him to report in detail any road calls, expenditures or any adjustments made enroute. He also must report any damage to freight or equipment, any traffic tickets and any tire change.

On the reverse side of the report sheet there is space provided for each driver to indicate what repairs are needed on the tractor in his opinion.

Trailer Maintenance

OUR trailers get inspections similar to the tractors on the same A, B, C and D mileage basis. Reefers get special attention in an A, B, C and D check because of the mechanical equipment.

On the back of the Truck and Trailer Service record, Fig. 3, which is in the equipment register book and on which mileage records are kept is a record of truck and trailer replacement parts which have been installed. In addition there is a record of road failures and wrecks. These records run for six months to the sheet.

Here you can find out whether you are over-servicing or under-servicing. Two of these sheets will give you a year's record on the unit. Certain operations may show up more frequently than others. Checking through the book you can survey quickly all road failures and their causes. By having all this accumulative information at your fingertips, you can readily determine if the proper amount of time is being spent on each operation. Thus with the same crew you can change the spread of work or make a change to better the condition by changing the method by which the work is done.

Tire Maintenance

COMPLETE records are kept on all tires. We know at all times which wheel on which unit each tire is mounted. We keep exact mileage on each tire by units and wheel location. This is kept on the tire mileage record (Form No. 6). Final disposition of all tires is shown on tire report (Form No. 7) which gives brands, mileage, condition and reason for junking plus a break-down on the average total recap mileage.

The above records make it possible for us to spot recurring failures and enables us to take the steps necessary to correct them thus effecting considerable economy.

PLENTY OF LOW-COST MILEAGE!



It's Studebaker's rugged, powerful, thrifty 1½-ton truck

EXPERIENCED truck operators the nation over are glad to see the pace-setting Studebaker organization back on the job of building civilian trucks.

They know that Studebaker sets the highest quality standards in the motor truck industry—standards that are a constant challenge to all other manufacturers of motor trucks.

They know further that Studebaker has successfully solved the problem of designing a truck so that it gets the maximum mileage out of every gallon of gasoline and every set of tires.

You can rely on Studebaker

One Studebaker truck model that's especially well-suited to today's needs is the capacious, powerful, 1½-ton Studebaker pictured above, available as cab-and-chassis for standard and special 12-foot bodies.

This economical, husky Studebaker has the same kind of sound, solid quality throughout that won highest commendation for nearly 200,000 rugged Studebaker military trucks in tough war service.

Studebaker also builds half-ton and one-ton trucks—and 1½-ton models in several wheelbases. At present, demand is greater than supply—but, in good time, everyone who wants a Studebaker truck can get one.

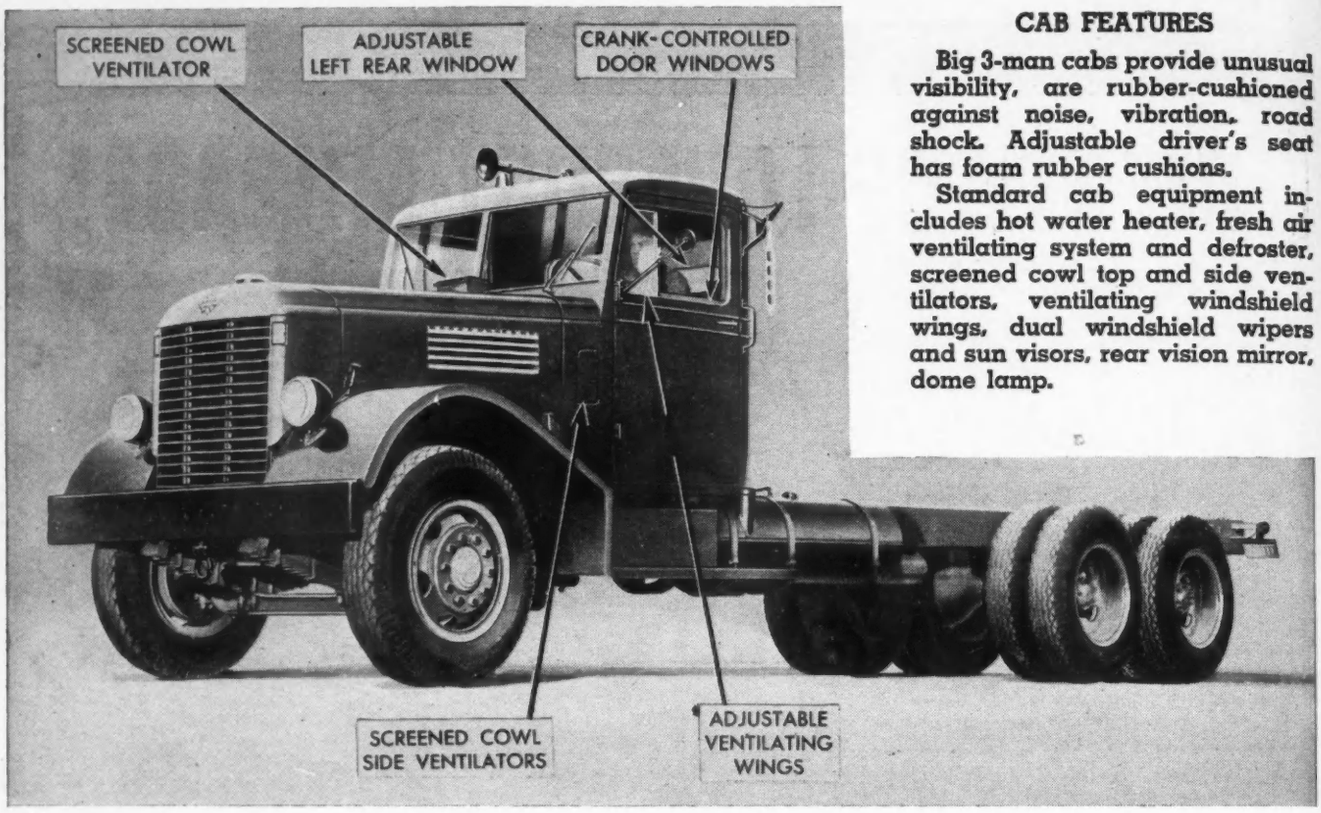
And remember, every truck with the Studebaker nameplate is designed to add new luster to the time-tested Studebaker reputation for trustworthy, low-cost transportation.

Over 94 years' experience in supplying America with outstanding hauling equipment stands behind Studebaker's ability to offer you the utmost truck value for your money. See your nearby Studebaker dealer.

Studebaker

South Bend 27, Indiana, U. S. A.

PIONEER AND PACEMAKER IN AUTOMOTIVE PROGRESS



CAB FEATURES

Big 3-man cabs provide unusual visibility, are rubber-cushioned against noise, vibration, road shock. Adjustable driver's seat has foam rubber cushions.

Standard cab equipment includes hot water heater, fresh air ventilating system and defroster, screened cowl top and side ventilators, ventilating windshield wings, dual windshield wipers and sun visors, rear vision mirror, dome lamp.

Fig. 1, above. Model W-4064-H, a 6 x 4 vehicle with a tandem-drive rear axle and g.v.w. of 40,000 lb. Newly designed cab features comfort, visibility.
Fig. 2, below. Model W-3042-H



International Announces West Coast Specials

"Western Freighters" offer choice of gas or diesel power, three gear ratios, six transmissions. Cabs feature driver comfort

RECENTLY, International Harvester Co.'s motor truck division unveiled its new heavy-duty West Coast trucks, which soon will go into production at the company's newly acquired Emeryville, Cal., plant.

The International "Western Freighter" highway transport models, W-3042-H and W-4064-H have gross vehicle weight ratings of 30,000 and 40,000 lbs. respectively, a rating which permits their use within the weight and length restrictions of all states in which vehicles of this type and size are legal and practical.

The model W-042-H, is equipped with the standard power plant—the International-Continental S-6749 gasoline engine. This 749 cu. in. displacement engine, which develops 254 bk. hpr. at 2600 r.p.m. and 585 lb. ft. of torque at 1400 r.p.m., was war-tested in a high-speed 13-ton prime mover. It delivers outstanding economical performance with the dependability so necessary in heavy-duty highway and off-highway transport service. The International-Continental engine is of the valve-in-head type, 5 3/8 in. bore and 5 1/2 in. stroke, compression ratio of 6.5 to 1, and embodies such features as replaceable dry cylinder liners, 2-piece head and extra heavy-duty 7-bearing crankshaft.

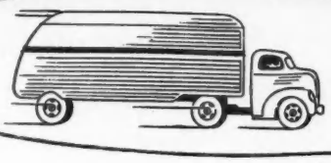
The W-4064-H is a 6 x 4, powered by one of the five optional engines available in these new Internationals. The Cummins diesel NHB-600 has

(TURN TO PAGE 132, PLEASE)

Exide...



THE LONG-LIFE BATTERY WITH THE LOW COST RECORD



Thousands of fleet owners know now ... more positively than ever before... that when they buy an Exide, they buy to last, and they buy to save. Months and years of exceptionally hard service supply the proof... not only that Exides can be counted on for thousands of extra miles, but also for a lower cost per mile of operation.

The fine record of Exide Extra-Duty Batteries in motor truck service is due to their electrical characteristics, correct design and rugged construction ... results of Exide engineering and manufacturing skill.

Exide
EXTRA DUTY BATTERIES

THE ELECTRIC STORAGE BATTERY COMPANY, Philadelphia 32 • Exide Batteries of Canada, Limited, Toronto

EYEING THE FUTURE

by JOSEPH GESCHELIN
Commercial Car Journal
Detroit Technical Editor

API proposes designating oil as Regular, Premium and Heavy-Duty. Oilmen and SAE groups oppose new definition of premium

How Should Motor Oils be Classified?

ANY lube session of the SAE is hot, but the one on the new classification of motor oils at the SAE Annual Meeting in Detroit on Jan. 7-11, was akin to nuclear fission. It all started with the presentation of a paper entitled "Motor Oils —Regular, Premium, and Heavy-Duty" by H. R. Wolf, General Motors Research, in which the author reported on the adoption of a new system of identifying motor oils, approved in 1945 by the Division of Marketing of the American Petroleum Institute. It was expected that the classification would be approved for inclusion as a standard in the 1946 SAE Handbook.

Although there was time for only a small group of speakers, it was evident that feeling was running high and, in many directions, worthy of consideration. For one thing, several prominent oilmen pointed out that the lubricant is not responsible for all of the ailments of the engine. As a matter of fact, it is now felt that certain types of fuels have more to do with sludging than does the lubricant. Moreover, where the fuel is at fault, even heavy-duty lubricants cannot cure the ailment.

It was evident, too, that considerable opposition existed. Many—we don't know what percentage—oilmen were opposed to the adoption of the classification approved by API, despite the fact that API is the spokesman for the petroleum industry. They asked for more time and more discussion before any standard is approved for publication.



OILMEN SAY . . .

. . . That the proposed new system of identifying motor oils does not represent tests based upon actual operating conditions, that definitions for each grade do not give minimum specifications suitable for selection by the user, that the term "premium" should designate a "quality" oil. They want a definition of the operating duty for which each oil is intended and demand a clarification of the terms, detergency and oxidation stability.

Disagreement on Definition

MAIN bone of contention concerned the term "premium." As far back as anyone can remember, "premium" oil referred to higher priced, higher quality lubricants, principally of Pennsylvania crude type. In any event, it referred to oils of high quality, rating a higher price. Since the new classification included any kind of oil meeting the definition in the paper, where does it leave the higher quality highly refined petroleum product?

Another matter for concern—so far as oilmen could see—is the inference that the adoption of the new lubricants disposes of the problems of sludge and varnish. Oilmen—at least many of them—feel that a great deal of work is needed to clear up the fuel situation and allied problems before fleetmen can accept it as a fact that the new grades constitute a complete answer to their troubles.

Dr. Wolf outlined the events leading up to the proposed classification of lubricants. This job was undertaken by the SAE Coordinating Research Council (CRC) and assigned to the SAE Coordinating Equipment Research Committee (CER) and the Coordinating Lubricants Research Committee (CLR) for study. After consideration by CER and CLR the matter was referred to the Lubricants Division, SAE Standards Committee. The CLR Panel recommended the following nomenclature:

Normal-Duty Oil.
General Service Oil.
All Purpose Oil.

The SAE sub-committee countered with its preference:

Mineral Engine Oil.
Heavy-Duty, Type I.
Heavy-Duty, Type II.

(TURN TO PAGE 246, PLEASE)

Here's Where the Trouble Starts!



And here's where Trouble Starts on an Oil Pumper

On any engine overhaul job *always* check the connecting rod and main bearings for wear. Worn bearings often are the heart of the trouble and, left in the engine, can defeat the purpose of the overhaul! For example, one badly worn bearing can "oil starve" other good bearings, causing failure and costly crankshaft damage.

If worn bearings are left in an overhauled engine with new piston rings, they can foul the rings so badly that they are unable to do their own job efficiently. Worn bearings are a primary cause of excess oil reaching the combustion chambers where it burns to motor-fouling carbon on pistons, piston rings, valves and spark plugs, causing sluggish, costly operation.

Always check the engine bearings with a Federal-Mogul Oil Leak Detector. If worn, replace in sets with Federal-Mogul Oil-Control Bearings to protect other hard-to-get engine parts and to restore power, pep and economy.

FEDERAL-MOGUL SERVICE • DETROIT 1, MICHIGAN
DIVISION OF FEDERAL-MOGUL CORPORATION

Replace With Genuine

FEDERAL-MOGUL

Oil-Control Bearings





ENGINEERING IMPROVEMENTS

Among the engineering improvements of the new deliveries are completely new pedal arrangements, with design approved by the Ford Motor Co., and more rugged cross sills which are 50 per cent stronger than previously.

New, wider, more comfortable driver seating, unobstructed vision and smooth, easy riding qualities resulting from more scientific distribution of weight contribute to less driver fatigue and consequently driver efficiency.

1946 Vanette Features Three New, Larger Bodies

All-steel, insulated, stand-up deliveries of either 425, 285 or 272-cu. ft. capacities feature new driver comforts

THREE completely new Vanettes for '46 have been announced by Vanette, Incorporated, Detroit. These new deliveries are the latest in functional beauty as applied to the delivery field. This compact, efficient design gives greater load space, improvements for driver convenience and ease of maintenance.

The three Vanettes for 1946 are: the Vanette Wholesaler, on the Ford 1½-ton heavy-duty chassis, with 134 in. wheelbase and 150 in. of load space, the Vanette Senior, on the 122 in. wheelbase Ford "tonner" chassis with 134 in. of load space, and the Vanette Close Coupled on the same chassis as the Senior with the wheelbase reduced to 103 in. and load space of 96 in. All models are available with either the 6- or 8-cyl. Ford engines.

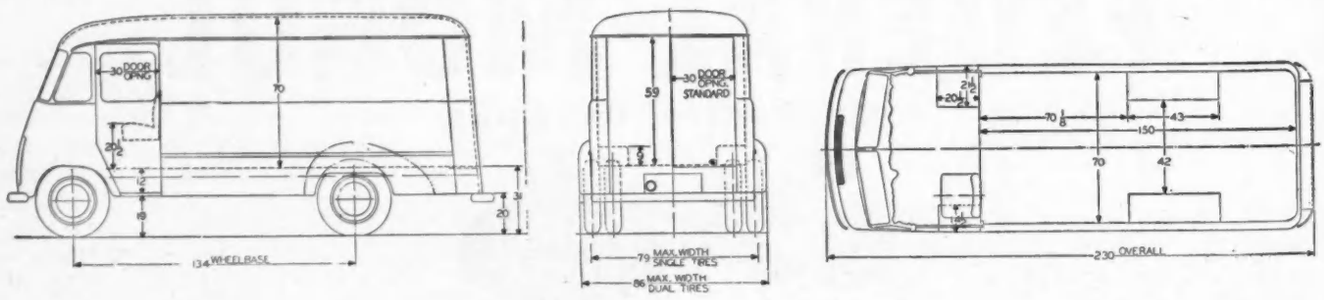
Extra height and width give the Vanette bodies added capacity without an appearance of top heaviness. A full 70 in. height makes it possible for an average man to work in the body standing up. Cubical capacity is 425 ft. on the Wholesaler; 380 ft. on the Senior and 272 ft. for the Close Coupled.

These models are said to be the answer to the delivery problems of handlers of relatively light, bulky products, having twice the load space of standard panel bodies, without increasing length or weight. They are of immediate interest to the department store, bakery, laundry and dry cleaner and florist.

The Wholesaler is especially suited to handling larger, heavier loads in longer runs such as "Feeder Stops," while the Senior is most efficient for

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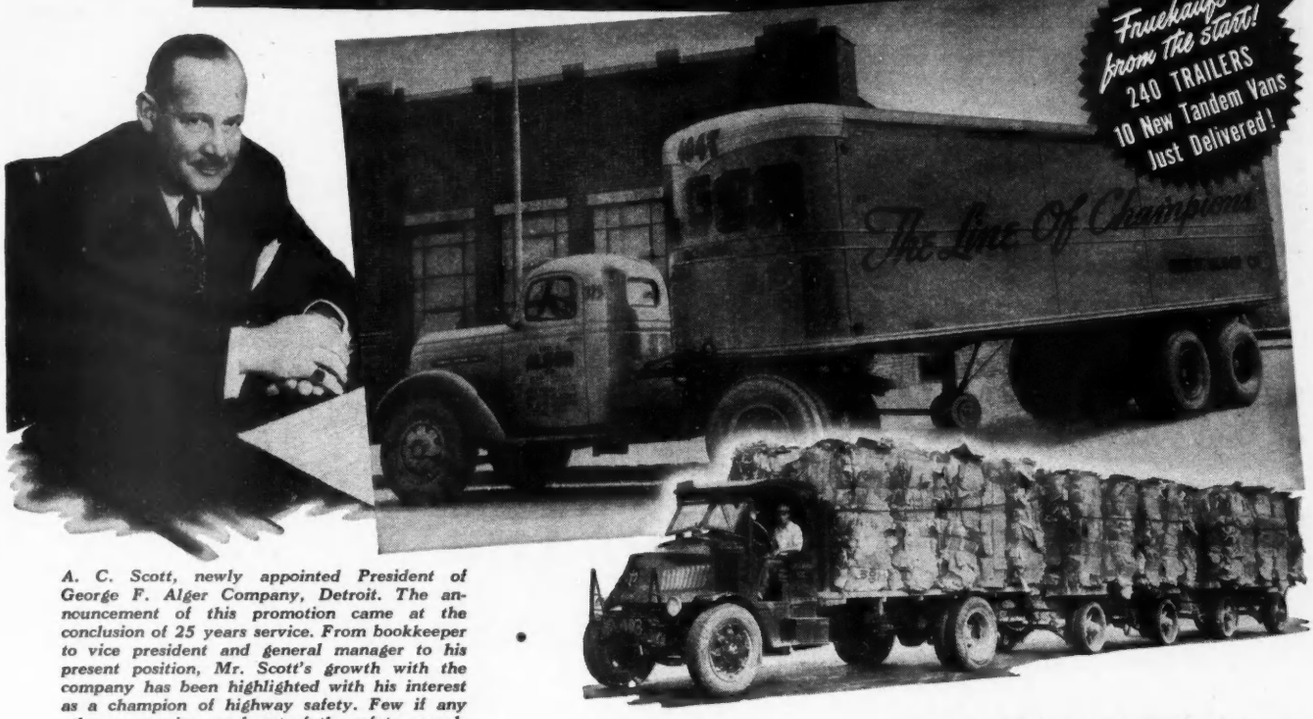
The Vanette Wholesaler, top of page, and below, drawings of blueprints of the model showing dimensions of new body



A COMPANY IS KNOWN BY THE CUSTOMERS It Keeps!

EVERYTHING FROM PINS TO PRESSES . . . PACKAGES TO PARTS . . . RIDE THE ALGER "Line of Champions" IN FRUEHAUFS!

Fruehaufs from the start! 240 TRAILERS 10 New Tandem Vans Just Delivered!



A. C. Scott, newly appointed President of George F. Alger Company, Detroit. The announcement of this promotion came at the conclusion of 25 years service. From bookkeeper to vice president and general manager to his present position, Mr. Scott's growth with the company has been highlighted with his interest as a champion of highway safety. Few if any other companies can boast of the safety awards and rodeo trophys won by Alger drivers.

These 4-wheel Fruehaufs loaded with waste paper consigned to Monroe, Michigan, were the first Trailers to be added to the Alger fleet of trucks more than 21 years ago.

VAN LOADS OF FREIGHT . . . flatbeds with steel . . . castings for auto plants . . . tanks for the army . . . bulk cement for big projects . . . there's no limitation to the kind of service given by these flexible rubber-tired highway conveyors. The orange and black Trailers of the Alger fleet are impressive sights on many city streets and on the open highways through 5 central states.

Twenty-one years ago George F. Alger adopted the Trailer method of hauling and purchased his first Fruehauf. Bigger loads were hauled. Service to customers was stepped-up. The business grew. More Fruehaufs were added to the fleet . . . different designs were engineered to meet the demands for the swift, safe movement of varied products.

Dependability of equipment—good appearance of Tractor and Trailer—operators with skill and "know how"—have all contributed much to the company's success story. Long, rugged service from the Trailers themselves is paralleled by men, many years in the company employ, who have found romance in the development of the motor transport industry.

The addition of 10 new Fruehauf-Tandem-Axle Freight-Vans to the "Line of Champions" is a part of Alger's postwar expansion program—another tribute to the product upon which they, in the hauling business, must depend for their earnings.

★ ★

World's Largest Builders of Truck-Trailers

FRUEHAUF TRAILER COMPANY
DETROIT 32, MICHIGAN
8 Factories—60 Factory Service Branches

"Engineered Transportation"

A TRUCK IS LIKE A HORSE — IT CAN PULL MORE THAN IT CAN CARRY

FRUEHAUF TRAILERS

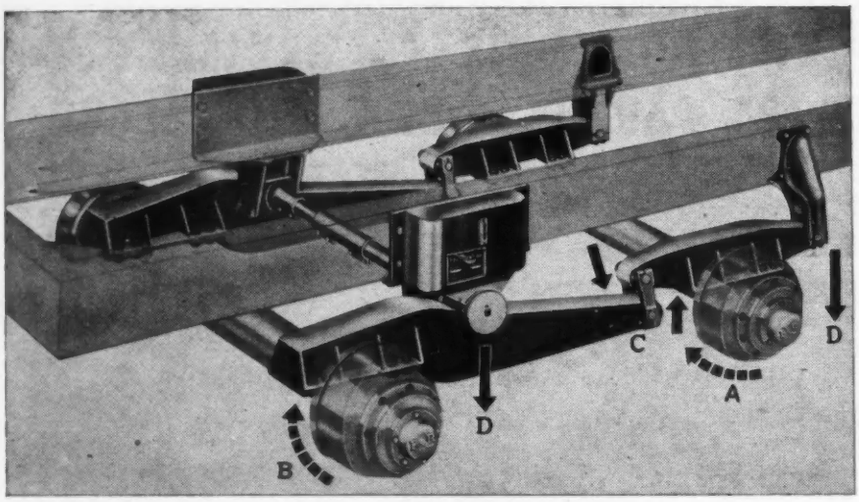
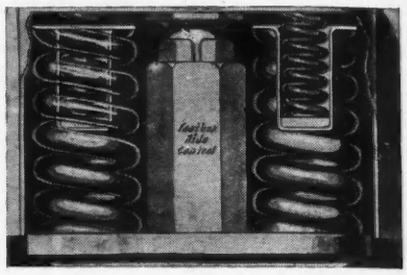


Fig. 1. Tandem axle coil spring suspension. Load is suspended in front of each axle on what are in effect, bell cranks. Upon application of brakes, each axle twists bell cranks in rotary motion, "A" and "B", which is transferred through the linkage at "C" to a downward pull at "D". Kinetic energy of load in motion tends to increase gripping power of all tires



Light loads and empties get a soft ride on the adjustable small coil underload springs mounted inside the main springs. Heavy loads ride on the main coils. All spring action is controlled by a frequency snubber, the Feather Ride Control

New Coil Spring Suspension Boosts Payload and Tire Life

Light weight unit has self-steering property, load adjustment. Frequency snubbers, bell crank feature smooth ride and stops

WEIGHT REDUCTION INCREASED PAYLOAD BY $2152.80

"One major item in weight reduction is the main coil spring itself which weighs only 15 lb. The other is elimination of all leaf spring accessories like multiple shackles, spring clips, tie-bolts, U-bolts, radius rods, etc., etc.

"One trailer firm reported an increased payload to the extent of $2152.80 a year on a trailer changed over to a Feather Ride tandem suspension. This is net profit, as no additional fuel, drivers, handling is required."

FROM the rugged terrain of the Pacific Coast comes a new type trailer suspension—the Feather Ride coil spring.

R. W. Pointer, president of Feather Ride, Inc., put his coil spring ideas to work on highway and logging trailers. Loads carried ranged up to 200,000 lbs. Minimum breakdowns and out-of-service lay-ups were reported.

Principal features and advantages claimed for the Feather Ride tandem axle suspension are: Trim appearance, hundreds of pounds lighter, underload springs, complete elimination of axle kick-up on fast stops, no need for lubrication, an automatic steering feature that greatly eases tire scuffing on curves, load indicator, and interchangeability among the few parts.

Operators who carry a variety of loads from light to heavy will be interested in advantages provided by underload springs. In petroleum hauling for example, the equipment rolls one way empty. With underload springs, Feather Ride suspension gives the empty tank a cushioned ride that ends the old problem of tanker leaks caused by the hammering action when riding on springs designed for a full load.

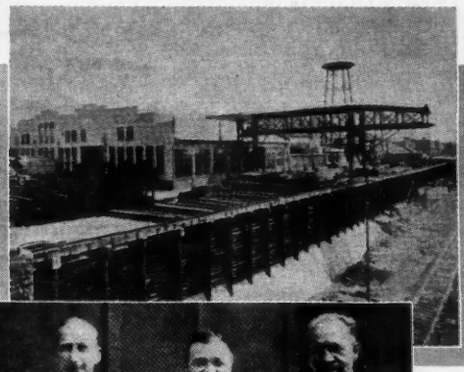
Snubbers Smooth Ride

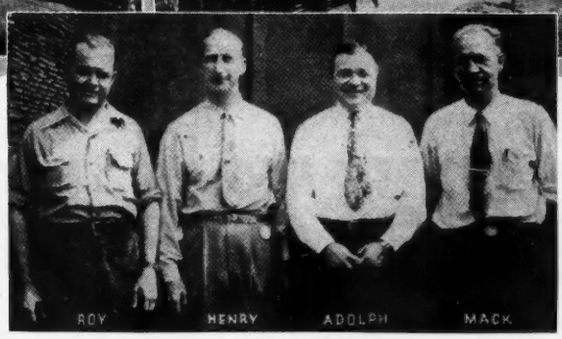
THE quick responsiveness of the coil spring to shocks required a device that would interrupt the rhythm of the spring. Tests determined the exact number of oscillations that would be ideal for trailer operation. The Feather Ride control was then built to this "ideal." In it three metal shoes slide up and down inside a tapered cylinder. Upon impact these shoes are expanded against the sides of the tapered cylinder by

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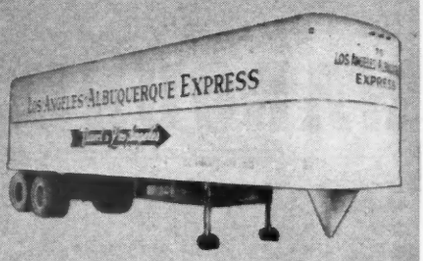


Complete manufacturing facilities feature the Winter-Weiss Company plant—one of the largest organizations of its kind in the Rocky Mountain region.





Teamwork keynotes Winter-Weiss service. This team includes: Roy Lowell, shop foreman, Henry Winter, Adolph Weiss, and J. J. "Mack" McCready, production supt.



Thirty-five foot Lindsay Structure trailer built by Winter-Weiss Co. for Los Angeles-Albuquerque Express.

YES There are "Ls JIMS"* in Denver...

THE WINTER WEISS CO.

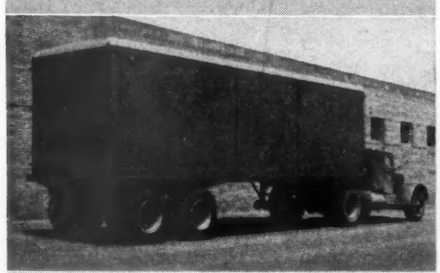
Partners since 1923, Henry Winter and Adolf Weiss have specialized for almost 25 years in building better truck bodies. Their slogan, "Personal Attention," means just that, and as Ls Body Builders they can meet your exact requirements and provide all the advantages resulting from the mass production of Lindsay Structure.

That is the advantage of the Ls plan. All over the country 162 "Ls Jims" are located where you need them for new bodies or for service. And only in their Ls bodies can you get the combination of individualized design, all-metal construction, high strength-weight ratio, and quick repair features that mean increased hours on the road and reduced operating costs.

The Lindsay Corporation, Adams-Franklin Bldg., Chicago 6, Ill.; 60 E. 42nd St., New York 17, N. Y.; or Lindsay Structure (Canada) Ltd., Dominion Square Building, Montreal.



Built for Kraft Cheese Co., this attractive Ls body is a good example of Winter-Weiss production.



Winter-Weiss Co. is ably qualified to supply your every requirement, large or small.



Another Lindsay Structure body built specially for Associated Grocers of Colorado.

There are 162 "Ls Jims" throughout the country. Do you know *your* local Ls dealer?

"Jim," a neighbor of yours, was chosen an Ls body builder because of his ability to handle your requirements intelligently—whether you need one or a thousand truck bodies.

Your "Jim" knows local conditions and regulations thoroughly and can design a body to meet your exact individual requirements. Unhampered by shipping problems, he makes speedy deliveries and does a quick factory repair job.



LINDSAY Ls STRUCTURE

U. S. Patents 2017629, 2263510, 2263511
U. S. and Foreign Patents and Patents Pending



WASHINGTON RUNAROUND

Steel the Major Issue . . . December Output Off 50% . . . New Truck Ceilings Await Normalcy . . . Trailers Excluded . . . Tire Outlook Improved . . . But Battery Output Will Drop . . . Auctions May Speed Surplus Disposal . . . Army Cuts Needs . . . Wage-Hour Case Delay

by GENE HARDY
CCJ Washington Bureau

Steel the Major Issue

All developments in the Nation's Capital are now discussed in regard to their relationship to the steel strike, which, regardless of its duration, has sent production goals of practically all items spinning.

Trucks, trailers, parts, tires, equipment—supplies of all these are affected by the shutdown of the nation's basic industry.

On Capitol Hill, added evidence of the effect of the strike on Washington thinking is clearly noticeable. For example, prior to the Christmas recess Congress, after futile attempts to work out suitable amendments to the price control act, was of a mind to let OPA expire on June 30, based on the belief that volume production would be achieved by that time in most lines, thereby eliminating one of the prime inflationary dangers. Now it is a sure bet that price control will be extended at least until the end of the year.

December Output Off 50%

December civilian truck production of 27,289 units was almost 50 per cent below that of November—the peak month during 1945. The General Motors strike and an overall parts shortage were largely responsible for the decline. Broken down December output revald h rm mmr December output revealed that 12,606 lights, 11,132 mediums, 3,094 light-heavies, and 1,207 heavy-heavies were turned into commercial channels. The greatest drop was in the production of lights and mediums.

During the month military trucks accounted for 750 units, which did not represent new procurement, but winding up of old contracts.

While the ending of the glass strike has broken one important bottleneck, industry sources say the January production will at best equal that of Deecember. The steel strike, if prolonged, will quickly hit component suppliers, whose inventories rarely carry more than 30 day's supply.

Ceilings Await Normalcy

The new truck pricing order will not be issued by OPA until the tempo of the entire automotive industry is speeded up and production reaches a more normal level. It is almost impossible to predict when this will be, since widespread strikes have thrown industry plans for rapid conversion right out of the window. However, OPA has revealed that the order, which will put trucks under dollars-and-cents ceilings, will set prices from 25 to 27 per cent lower than current ceilings.

It is OPA's belief that to issue the order now would do more harm, since it would likely cause a further drop in the present limited output, than is being done by continuing present cost-plus ceilings for a few more months.

Truck manufacturers will probably be consulted by OPA before the order is issued to determine whether, in the industry's view, the time is ripe for the price roll-back.

Trailers Excluded

Truck-trailers are excluded from the order, but OPA is giving some thought to possible changes in the truck-trailer pricing setup. However, OPA believes that the diversity of the trailer industry makes it impractical, at this time, to set dollar-and-cents ceilings for trailers by make and model.

(TURN TO PAGE 87 PLEASE)

WASHINGTON RUNAROUND

(CONTINUED FROM PAGE 84)

At the present time, OPA is undertaking a study of the price problems of the trailer industry, with a view to deciding: (1) whether any price relief will be required; (2) if price relief is required, whether it should be given through including trailers under SO 142—an adjustment order; or (3) whether fixed dollar-and-cents ceilings should be set. Trailer prices, in general, are still at 1942 levels.

Truck-trailer output, before the steel strike began, was above its wartime level, totaling somewhere between 3000 and 4000 units monthly.

Since inventories in most cases do not run beyond 2 or 3 weeks' supply, production estimates have been revised downward. The tire situation was also easing for some trailer producers until the steel strike threw the economy into reverse.

Tire Outlook Improved

The production goal for truck and bus tires during the current quarter amounts to 3,500,000 tires, as compared with 3,115,000 turned out the preceding quarter, according to preliminary CPA figures. The present level of production in the industry at the end of January indicated that this goal will be met. However, the length of the steel strike will determine whether these goals will be attained since a prolonged shortage of steel wire used in tire beads would bring tire production to a virtual standstill.

In any case, not all of this production will be available to fill replacement demand, which remains very high, since part of the total will go to new vehicles and a small amount will be set aside to meet export requirements.

In addition, about 3,150,000 truck and bus tubes will be turned out during this quarter.

But Batteries Will Drop

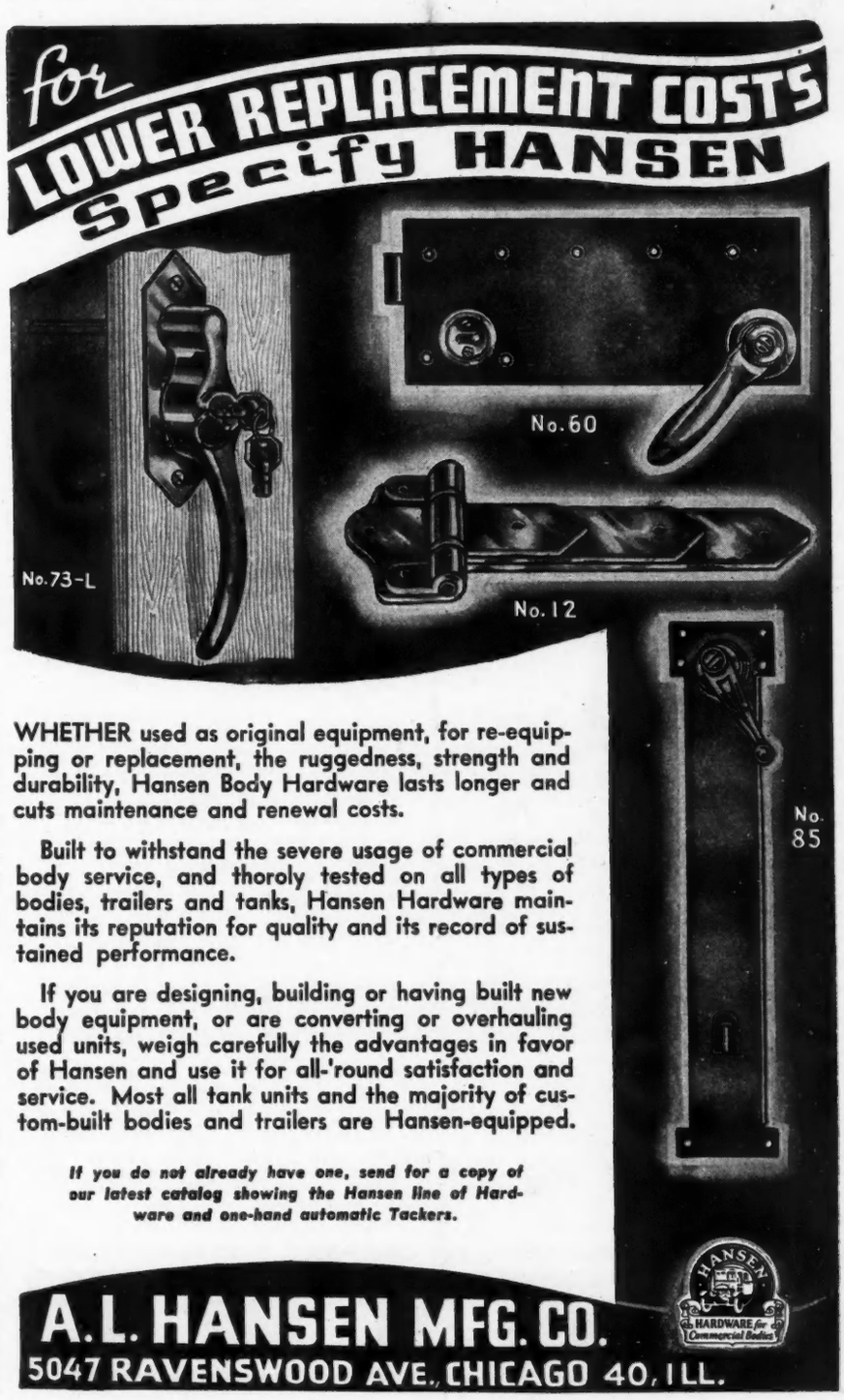
Allocations of lead to automotive battery manufacturers by CPA will provide only enough lead to produce 16,200,000 batteries, as compared with 1945 production of 19,200,000. Based on first quarter allocations, output in 1946 will be about 78 per cent of 1945 production. The shortage of lead has also resulted in a cut of about the same proportion in tetraethyl lead for gasoline.

Auctions May Speed Surplus

The War Assets Corp., which is disposing of practically all surplus goods, is reported to have under consideration a plan whereby auction sales will be utilized as a quick means of disposal. While the government may not get as high a return under this method, it is felt that it would do away with the necessity of spending large sums for government maintenance of surplus property. The Ordnance Department which has the major portion of all automotive surpluses will require $74,500,000 for the storage, handling, and packaging of its surpluses for the six-months period ending June 30, 1946.

While sales of parts have increased, the Ordnance Department is still attempting to unload the unworkable sales system in which it has become involved. Ordnance is hopeful that it can turn the whole job over to War

(TURN TO NEXT PAGE, PLEASE)



WASHINGTON RUNAROUND

(CONTINUED FROM PAGE 87)

Assets sometime during February.

As of December 15, parts sales totaled $40,000,000 as compared with total declarations of $250,000,000.

Army Cuts Reserve Needs

Large quantities of new and reconditioned surplus trucks that are now being offered came about as a result of an investigation by the Senate Investigating Committee, headed by Sen. James M. Mead, Dem., N. Y. The committee's investigation resulted in the Army's scrapping its plans to set up huge reserves of commercial type items, which in some instances called for 20 years' supply. In the case of trucks and other automotive items, the plan called for a reserve sufficient to supply the Army until June, 1959. While the reserves if eventually realized would have been astronomical, the stocks on hand did not approach the desired reserves but would have required additional large scale procurement, which the Army did not contemplate.

The Committee took the position that the material would become obsolete, and that, if needed, commercial type items could again be procured in a relatively short time. In addition, it was found that the cost of handling and storing such reserves would far outweigh their practical value.

If this plan for strategic reserves had been carried through it would have meant that only a small portion of Army stocks would have been declared surplus, and some items would have been kept for use as late as 1970.

The effect of the Committee's investigation was to eliminate all reserves of civilian-type items for the peacetime Army after June 30, 1949, and the strategic reserve for the next war.

Bonus of 16,000 Units

As a result, the Ordnance Department immediately declared 15,998 trucks and trailers from depot stocks, of which approximately 90 per cent are new, and the remainder reconditioned. This is in addition to the amounts which normally would have been declared surplus. It is also estimated that an equal amount will be declared within the next two years as the Army demobilizes. The truck declarations included 1½-ton, 2½-ton, 4-ton, 5-ton, 6-ton and 7½-ton trucks, as well as 12 and 45-ton truck trailers, and 6 and 10-ton semi-trailers. The major portion of the declaration was made up of 4,139 10-ton, stake and platform, semi-trailers; 2,792 5-ton, 4 x 2, tractors; 2,142 1½-ton, 4 x 4, cargo trucks; and 1,333 2½-ton, 6 x 6, cargo trucks.

In addition, the Ordnance Department reports that it plans no truck procurement through fiscal year 1947.

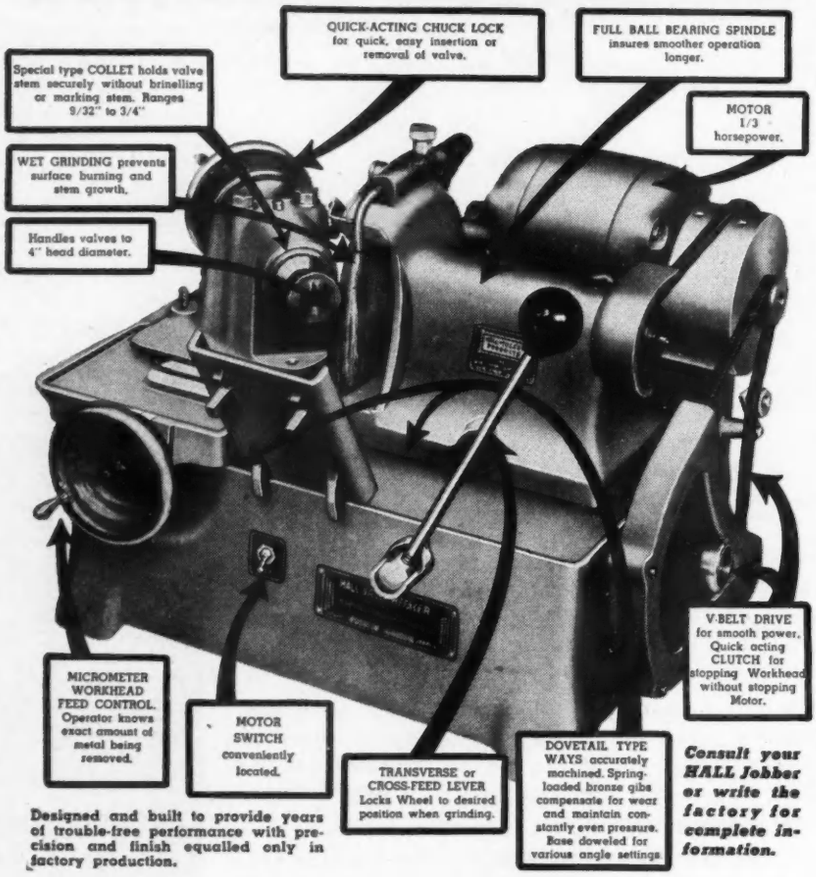
Wage-Hour Case Delayed

A vital wage-hour case before the Supreme Court, which is of the utmost importance to motor truck operators, will not be decided until the war crimes case against the major Nazi war criminals is completed. While this may sound like a "believe

(TURN TO PAGE 90, PLEASE)

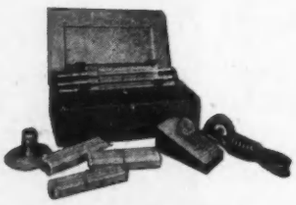
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Designed and built to provide years of trouble-free performance with precision and finish equalled only in factory production.

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Now any mechanic can quickly and easily fit piston pins to a rotating, push, or press fit as desired. Eliminates use of costly reamers and reamer sharpening. Dulled or nicked reamers can be used for roughing and hole finished to size with these Hones. Can also be used for enlarging, rounding up or polishing small diameter holes in any metal. Low in first cost; economical to use. Can be used wet or dry with electric drill or in drill press. Made in 3-tool sets covering ranges of .740" to 1.150" and .484" to .750".

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for heavy duty service with extra metal added for correct heat transfer and extra strength.

It pays to specify Sealed Power Heavy Duty Pistons

SEALED POWER PISTON RINGS

SEALED POWER CORPORATION

Muskegon, Michigan • Windsor, Ontario

WASHINGTON RUNAROUND

(CONTINUED FROM PAGE 88)

it or not" story, the Court has declined to render a decision in the case until Justice Robert H. Jackson, Chief American prosecutor at the Nuernberg trials, returns to the Court. The case involved ICC jurisdiction over the hours of service of motor carrier employees coming within the exemption provided for in Section 13 (b) (1) of the Fair Labor Standards Act. The Court's action indicates a possible 4 to 4 split on the case.

Justice Jackson has been ordered by the President to leave the prosecution of secondary war criminals to other counsel, and the Justice has indicated that he will return to the Court for the latter part of the spring sessions.

ICC Upholds Safety Angle

In the case before the Court (Levinson vs. Spector Motor Service), Levinson, a checker at the common carrier's Chicago terminal, sued to establish coverage under the Fair Labor Standards Act, and won a court verdict upon a finding that a major portion of his work did not affect safety of operation. However, this finding was reversed by the Appellate Court for the First District of Illinois, which ruled that the quantity of safety work was not a fair test as to the applicability of the exemption and stated that the determining factor was "whether an employee performs any duties which substantially affect the safety of operation, rather than whether the duties affecting safety are substantial." The Illinois Supreme Court then upheld the Appellate Court's findings, but did not agree with that tribunal's views on the substantive nature of the work.

The ICC has filed a brief with the Supreme Court upholding the Appellate Court's decision that any employee whose work affects safety comes under ICC jurisdiction regardless of the time spent in such work.

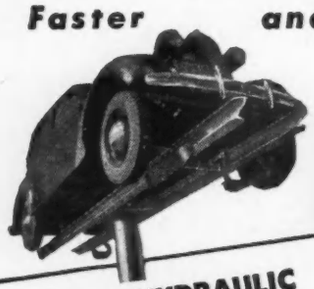
The Supreme Court's eventual decisions should be welcomed by all motor truck owners since it will serve to clear up the many diffiering interpretations set forth by the two agencies involved.

FEA Backs German Industry

Adopting a more moderate tone than that of the Technical Industrial Disarmament Committee, the Foreign Economic Administration in its final report on German economic and industrial disarmament has recommended that the German automotive industry be permitted to produce a limited number—90,000—of passenger vehicles and light trucks weighing no more 2500 lb. Production of heavy trucks and military vehicles would be prohibited. Maintenance and repair facilities would also be permitted. Exports of finished vehicles and parts would be prohibited, but imports of vehicles which could not be produced domestically and which are necessary to the German civilian economy would be allowed.

The FEA recommendations are only advisory in character and are subject to further policy decisions by the President and the State Department.

Faster and Better Work At Lower Cost Will Be Done With



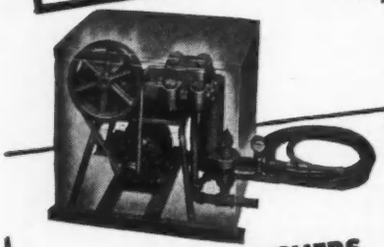
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AIR COMPRESSORS
HYDRAULIC AUTO LIFTS
CAR WASHERS

Curtis HYDRAULIC AUTO LIFTS

Curtis Lifts make those "hard-to-get-at" jobs easily accessible. Enable you to handle an increased volume of business and satisfy those "always-in-a-hurry" customers. Built by one of the pioneer lift manufacturers, Curtis Lifts operate day after day with a minimum of attention.

You'll be able to get the famous CURTIS line of dependable service equipment — long lasting, efficient, economical — proved by many years of intensive service in all types of automotive service establishments



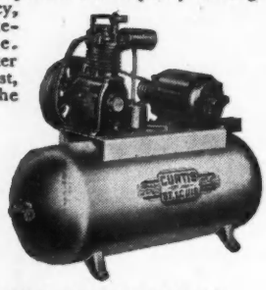
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Clean the entire car, speed work, cut the time per car. They attract customers — and often show up needed repairs and adjustments that hand washing won't disclose. The economy, proven reliability, and low first-cost of Curtis Washers make them an outstanding value for any shop.

Curtis AIR COMPRESSORS

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● Just a touch of the starter and—ZOOM—motors start *right now*, with Casite in the crankcase. Casite retards congealing of oil . . . lets engines spin over rapidly . . . gives fast, battery-saving starts, no matter how cold. Meet those heavy schedules. Put Casite in every motor now!

For passenger cars and small trucks, a pint in the crankcase every oil change, or every 1000 miles. For larger units and Diesels—10% of crankcase capacity.

WHAT CASITE DOES

ALL THE TIME—

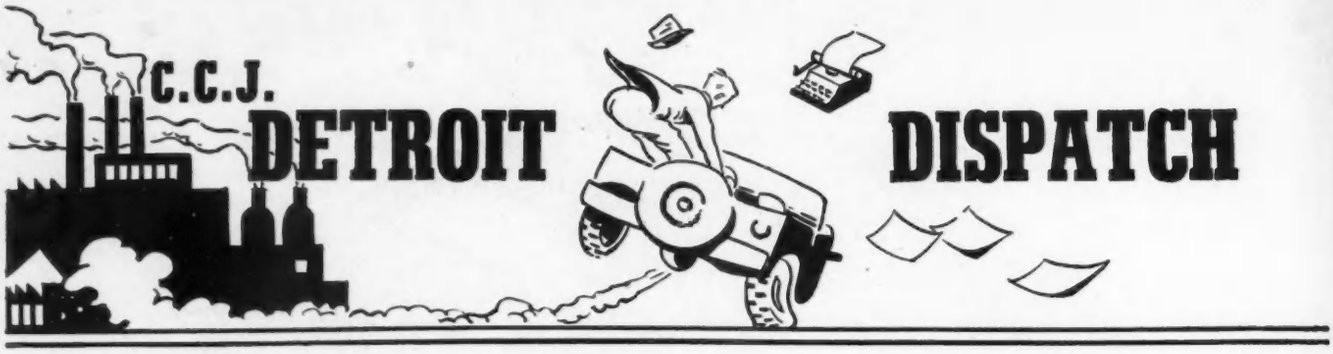
- Reduces formation of sludge and gum.
- Frees sticking valves and rings.
- Carries oil to close tolerance areas.

AND IN WINTER—

- Retards congealing of oil.
- Gives quick starting, even below zero.
- Speeds up lubrication on cold starts.



THE CASITE CORPORATION • HASTINGS, MICHIGAN



Scant Comfort from Detroit . . . Ford Shuts Down . . . Chevrolet Has Good Reserve . . . Dodge in Limited Output . . . GMC May Get Rolling Soon . . . Federal Short on Accessories . . . Price Rollback Delayed

by LEONARD WESTRATE
CCJ Detroit News Editor

Scant Comfort

Fleet operators who have been looking for that bright new day when they could fatten their stables with new trucks to replace the faithful but decrepit vehicles they have nursemaided along in desperation can get scant comfort from conditions prevailing in Detroit at the end of January. Strikes and shortages of many important parts and of glass had pretty well kept output in low gear. Just when things appeared to be picking up a bit, the steel workers stripped the gears by calling a nationwide strike. The effect was quick and deadly. The consensus of manufacturers, however, is that time will heal even the strike situation and, when that poison is out of the industrial system, production will climb to unprecedented levels.

Ford Shuts Down

Five days after the strike was called, Ford laid off 15,000 workers with the announcement that assembly lines would stop when the normal "float" of components was exhausted, a matter of four or five days. The shutdown is not a matter of a steel shortage at the Ford plant, but rather one of suppliers not being able to get the metal for fabrication of parts. In fact, Ford has been supplying some vendors with certain types of steel to keep them rolling. However, so many now cannot get steel to operate, that a shutdown is necessary. Also, many suppliers' employees are members of the striking steel workers union.

Loss of Ford production is a serious blow to truck production, since the company has been the largest single producer, with output running in excess of 1000 commercial units a day, about equally divided between trucks and commercial cars. Since the start of the present model run, Ford has turned out about 95,000 trucks powered by the 100-hp. V-8 engine, and nearly 30,000 half-ton commercial cars with 90-hp. V-8 motor.

How long the company will remain closed is entirely a matter of the duration of the steel strike. There is no opportunity to build up stockpiles of parts and it is estimated that it will take a minimum of three weeks after the steel workers go back to their jobs before truck production can again start. The reason is that it takes from ten days to two weeks to get blast furnaces in operation and steel on the way to vendors, and another week for the parts maker to fabricate the material and get it into the Ford plants.

Chevrolet Reserve Good

Chevrolet, which normally is the largest producer of 1½-ton trucks, still was strikebound at the first of this month with no prospect for an early settlement in sight. If the strike should end before the steel strike does, there is a good chance for Chevrolet to catch up on its competitors, since large inventories of steel and other components have been built up during the seige. Under government regulations, reserves equal to a 45-day inventory are allowed for most materials, with a 30-day limit imposed on critical items so that the company should be able to run for at least a month without materials trouble.

Dodge in Limited Output

Dodge Div. of Chrysler Corp. was running out between 400 and 500 trucks a day in late January. However, glass and other short items still were bothersome and little progress was being made in stepping up the rate. The division encountered a stoppage during the month, when AFL pickets stopped the flow of materials into the plant in an effort to enforce employment of AFL drivers on truck driveaway deliveries.

So far as steel goes, Chrysler Corp. has not divulged its position. A representative of a large steel company, however, reports that before the strike Chrysler was able to acquire a heavy tonnage which has been cached in warehouses all around Detroit. However true the report is it may not be of too much help if suppliers, like those supplying Ford, can-

(TURN TO PAGE 94, PLEASE)

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1ST IN POWER BRAKING



Hydrovac* leadership in the field of power braking is based on the firm foundation of performance.

More than a million units and billions of miles of service under extremes of operating conditions have emphasized that Hydrovac is by far the most advanced and efficient power-braking unit on the market.

Hydrovac is easily connected into any vehicle's hydraulic brake system and needs no adjustment at installation or in service.

By adding the latent vacuum power of the engine manifold to the hydraulic system, Hydrovac assures smooth, positive stopping with minimum effort for the driver.

For complete information on Hydrovac—the most advanced and best proved power-braking unit, see your Bendix B-K* dealer or write direct:

*TRADE MARKS

Complete Kits available for field installation; Kits include the Bendix Installagraph—a new and simplified type of installation picture that enables any mechanic to make the installation.

BENDIX PRODUCTS DIVISION

BENDIX AVIATION CORPORATION **SOUTH BEND 20, INDIANA**

PRODUCT OF Bendix AVIATION CORPORATION

DETROIT DISPATCH

(CONTINUED FROM PAGE 92)

not get steel for fabrication or their own workers are out on strike.

GMC May Get Rolling Soon

GMC Truck and Coach division of G.M. has not turned a wheel since Nov. 21, but like Chevrolet, has built up inventories and if the strike is settled should make good progress for at least the first several weeks even if other strikes develop among suppliers.

Federal Short Accessories

Federal Motor Truck Co., the one other Detroit producer, has been maintaining a steady schedule of production but expects to run out of generators, starting motors, and fuel pumps sometime this month unless the strike against General Motors, from whom it buys them, is settled. A fair inventory of steel for the company's own needs is on hand but, again, the problem of parts makers is involved.

Price Roll Back Delayed

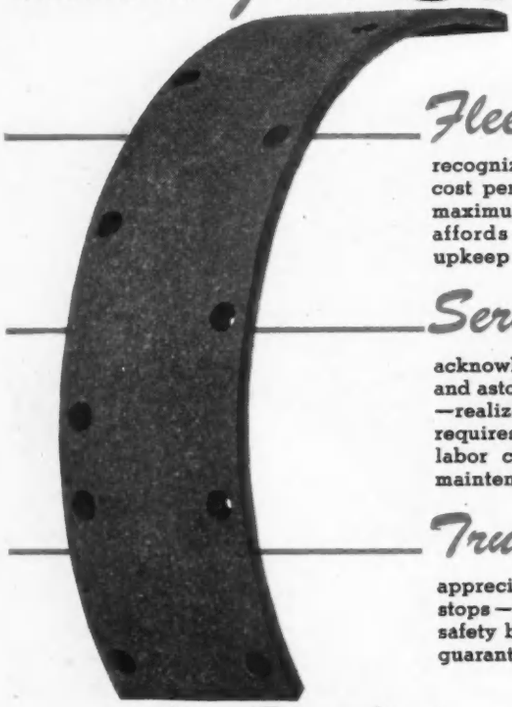
The truck price rollback, promised by OPA, is not due for several weeks yet, according to prevailing opinion here. No company official will stick his neck out to venture a guess as to how much prices will be trimmed, but it is the general off-the-record opinion that it will not be as close to '42 levels, as in the case of passenger cars. Although truck prices were increased about an average of 20 per cent during the war, the boost had a string attached. The increases were granted on the basis of limited production, with the understanding that prices would be revised when full production was possible.

While fleet operators will welcome the cutback in price, the manufacturers are groaning. With manufacturing costs far above those prevailing prewar, they say they cannot stand too much of a cut without running into losses. A dealer discount cut approximating that taken by passenger car dealers is expected to be included in the revised pricing order.

"Power Wagon" Notes

Dodge has started production of its "Power Wagon" four-wheel drive 1-ton utility truck. The company had orders for more than 800 of the units before production got under way. Heavy interest is shown by oil development companies and public utilities, according to one spokesman. Fleet operators also are said to have considerable interest in the truck as service units. With four-wheel drive, they can haul heavy trucks out of the ditch and for extermely heavy jobs can be equipped with power-driven front-end winch.

FOR BRAKE LINING . . .
Investigate GRIZZLY
REG. U. S. PAT. OFF.



Fleet Owners
recognize the economy of Grizzly's lower cost per mile of service—appreciate the maximum safety and dependability that affords substantial reductions on fleet upkeep costs.

Service Managers
acknowledge Grizzly's easy installation and astonishing freedom from adjustment—realize that because Grizzly brake lining requires less attention, more time and labor can be devoted to other needed maintenance work.

Truck Operators
appreciate Grizzly's quicker, smoother stops—know that the extra margin of safety built into every Grizzly set is their guarantee of greater safety on the road.

BIG . . . but Flexible!
True—Grizzly is big—but it has the necessary flexibility to serve each user, whether fleet owner or passenger car owner, in the best possible way. Brake lining problems, of widely divergent natures, are solved at Grizzly.

EXPERIENCED . . . but Alert!
Thirty years experience in the manufacture of brake lining has provided Grizzly with a priceless background for making fine brake lining—has kept Grizzly constantly alert to new developments.
There's a Grizzly distributor near you—call him today! Grizzly Manufacturing Company, Paulding, Ohio.



"Bear in Mind" . . . ask for
GRIZZLY
REG. U. S. PAT. OFF.
BRAKE LINING



Imagine a grocery counter stretching 300 miles . . . reaching almost across the state of Kansas. In effect, that's what a fleet of truck-trailers have helped J. S. Dillon & Sons Food Stores to accomplish. Eight Fruehauf trailers in the Dillon fleet keep fresh foods moving into 24 stores in 14 thriving communities

SOFT PRESSURE DOES IT!

Rebores need rings designed especially for replacement—*soft pressure* rings, like Steel-Vents. That's why Hastings Steel-Vent piston rings rate so high with motor specialists everywhere—in rebores as well as extreme tapers.

HASTINGS MANUFACTURING COMPANY, HASTINGS, MICHIGAN
Hastings Ltd., Toronto

SOFT PRESSURE DOES IT—IN REBORES TOO

Here's another testimonial to Steel-Vent's rebore popularity: "For several years we have used Hastings Steel-Vent sets in all types of cylinders—steel sleeve, rebored cast blocks and tapered cylinders. Our experience has been very satisfactory as we have used them in both passenger car and truck motors in all classes of service. Because of our experience we aren't surprised at the low cylinder wall wear, as *we often get two re-ring jobs after original installation on rebore jobs.*"



HASTINGS STEEL-VENT

PISTON RINGS

U. S. PAT. 2,148,997

TOUGH ON OIL-PUMPING **GENTLE** ON CYLINDER WALLS

AUTOMOBILE DESIGN

(CONTINUED FROM PAGE 57)

We have found that with the greater floor space available within the new car types, we can make whole new arrangements of interior—a floor space hitherto unobtainable and even, perhaps, undesirable up to this point.

Why should a motor car have a floor 6½ ft. wide and 11½ ft. long unobstructed? It is too much room for the motorcar problems as we have had them today. But now, postwar, we are coming into a new era of travel.

Transportation Plus

THERE is not a person reading this who is not planning a trip of some kind. Not only must he have transportation to go and come on schedule, but he must have a place to stop at night—hotel, tourist camp, tourist home, or something.

Today, if you were ready to make your trip, there is no place where you can stop. The hotels already are full, the railroads crowded, the airlines oversold for months ahead on many lines.

Now that we have this problem of night travel, the extra space in the car can well be used for not only a couch but a full-sized bed. This is not so much for night stops as for use on the road while the car is traveling between points, making night driving for the driver a feasible thing and more comfortable than the railroad. Fitted with a heater which works all the time, whether the engine is running or not, it becomes a practical thing for overnight emergency stops, as well.

There is even a possibility that many new types of cars may develop a combination of trailer and motorcar that can be used for actual living, with kitchen equipment, and so forth. At any rate, there is a need for more room, more comfort, and luxury in touring.

New Materials

Next comes the improvement in materials. We have heard for many years of the possibility of the plastic car. If we think in terms of the ordinary pressure-cast materials from which ash trays, door handles, and the like are made, there is little chance of plastics being the basis of any serious stressed structures.

From this time on there will be great developments in this line, and in my opinion, glass and equivalent fiber materials will soon be giving steel the run in light weight structures that steel did to plywood and wood structures—not only because of greater strength and less weight, but cheaper fabrication methods, quicker production, quicker turnover of material, stocks, and the like.

Some of these new materials have an impact strength more than five times that of steel, which means a great safety to the rider inside the body of such a car.

New Power Plants

THE next improvement will be in the matter of power. In my opinion, we are about to relegate the poppet valve engine into the ash can. New developments with sleeve valves, Skinner slide valves, Argyle cuff valve, etc., are leading to much

(TURN TO PAGE 105, PLEASE)

AIR IS POWER



How much does yours cost?

WORN out or undersized Compressors eat up plenty of your hard earned Profits. Par "Air Power" cuts costs, keeps air operated appliances operating at top speed, and is easy on the pocket book. That's why it pays to have your Par Jobber check up on your air requirements—call him today.

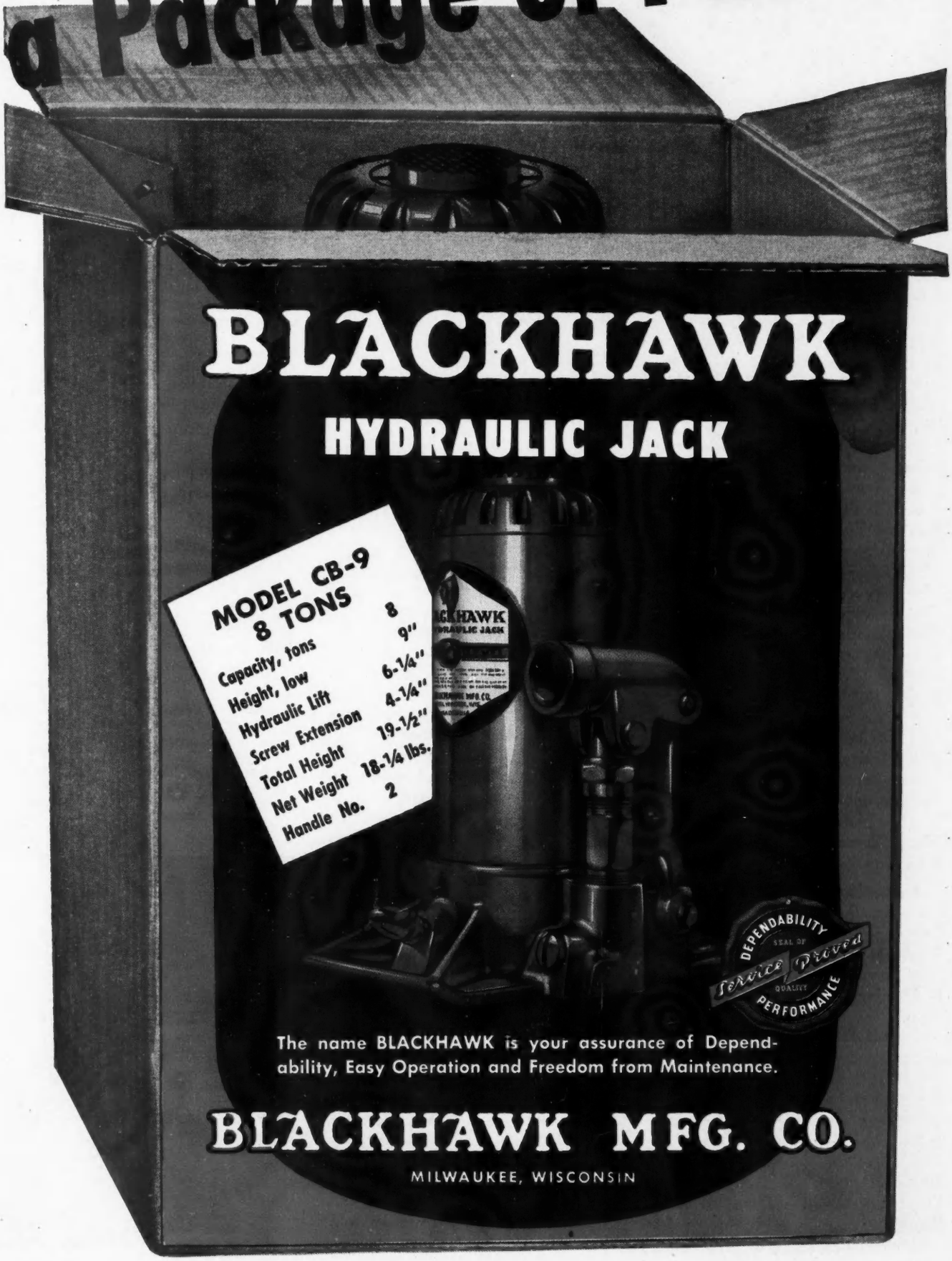
Write for Catalog A-46

Lynch . . . By Comparison — You'll Buy PAR

Manufacturing Corporation

TOLEDO 1, OHIO, U. S. A.

a Package of Power



CCJ NEWSCAST



SAE Engineering Meetings Scheduled for 1946

Ten national engineering meetings have been scheduled for 1946 by the Society of Automotive Engineers, it has been announced by SAE General Manager John A. C. Warner.

The SAE Summer (Semi-Annual) Meeting, the first held since the outbreak of war, is scheduled for June 2 to 7, at French Lick, Ind., and the National West Coast Transportation and Maintenance Meeting will take place August 22 to 24, at the New Washington Hotel in Seattle, Wash. The second meeting of the National Transportation and Maintenance Division has been scheduled for October 16 and 17, at the Hotel Knickerbocker, in Chicago. On November 7 and 8, the National Fuel and Lubricants Division will meet at the Mayo Hotel, Tulsa, Okla. Programs will emphasize peacetime applications of wartime automotive developments.

Plans Arranged for Highway Safety Conference

An outline of plans and organization for the President's Highway Safety Conference to be held in Washington, May 8, 9 and 10, has been given by Major General Philip B. Fleming, Federal Works Administrator.

General Fleming will be chairman of the conference, and Thomas H. MacDonald, Commissioner of Public Roads, will be chairman of the coordinating committee. Colonel Light B. Yost has been appointed executive director of the Conference to assist Mr. MacDonald.

Committees will be appointed later, General Fleming said, to report recommendations to the Conference on accident reporting, law enforcement, engineering, laws and ordinances, driver licensing, education, public information and public support.

Court Wins Consent Decree From Allied Van Lines

Allied Van Lines, Inc., its parent, the National Furniture Warehousemen's Assn., and some 500 warehouse and trucking company members of the association have agreed to desist from allegedly monopolistic practices charged against the association by the U. S. Department of Justice.

The consent decree resulted from a suit in which it was contended that the NFWA through its subsidiary, Allied Van Lines, Inc., entered into contracts and agreements with household goods carriers in more than 228 cities throughout the country to bring about unified control and to restrain competition among carriers.

The Justice Department said the decree requires the NFWA to divest itself of all control or ownership in Allied Van Lines within six months.

Ceilings on Army Trucks 103% Over List Price

Ceiling prices for used 1946 model commercial motor vehicles—trucks, truck-trailers and motorcycles—have been established by the OPA at the same percentage levels in relation to new vehicle prices as those provided for 1945 models.

Under the action, ceiling prices for used 1946 model commercial motor vehicles are established as 103 per cent of the new vehicle list price when sold on a warranted basis, and 81 per cent of that price when sold

(TURN TO PAGE 100, PLEASE)



V. W. Bergenthal, an executive officer of the Wagner Electric Corp., retired on December 31. He will continue to serve as a director of the company.



W. M. Walworth has been elected vice president and chief engineer of the Mack Mfg. Corp. He will make his headquarters at the company's general offices in New York City



Walter S. Peper, newly appointed New York representative of Davisbilt Products Co., Cincinnati, Ohio



George W. Veale, a vice president of the Eaton Mfg. Co., has been appointed general manager of the company's Axle Division



Fred Lockwood, formerly with General Motors and the Packard Motor Co., recently joined Thermoid Co. of Trenton, N. J., as distict manager. He will cover the North Carolina and part of South Carolina territory

How Up-to-Date are you on ALUMINUM?



WISE EGG...
Light shell carries heavy load

POUND FOR POUND MORE PAYLOAD! There's an example for you—that egg up there!

Just like a truck or trailer body, built of light-weight, high-strength Reynolds Aluminum alloys . . . *deadload is reduced to a minimum!*

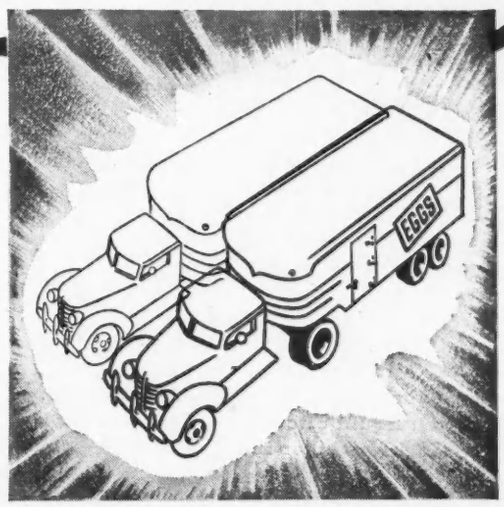
To the truck operator, this means more payload for each truck—especially in states where the *total gross weight* must be kept within highway limits.

Aluminum means lower operating costs also . . . less gas and oil used . . . less wear-and-tear on tires per *ton-mile* of payload.

Another dollars-and-cents advantage comes from aluminum's high corrosion-resistance. Rust is no longer a menace . . . bodies last longer, require less repair.

Get the facts! Reynolds technicians will gladly work with your engineers. Offices in principal cities. Phone nearest office . . . or write: Reynolds Metals Company, Aluminum Division, 2533 South Third Street, Louisville 1, Kentucky.

Detroit address: 1010 Fisher Building



SAME CUBIC CAPACITY . . . HUNDREDS OF POUNDS LIGHTER! Reynolds Aluminum alloys, properly specified and used, save up to ½ body weight. Result with trucks of every type: Pound for pound—more payload!

CONSIDER ALUMINUM—CONSULT REYNOLDS

REYNOLDS METALS

REYNOLDS ALUMINUM

The Great New Source of

INGOT · SHEET · SHAPES · WIRE · ROD · BAR · TUBING · PARTS · FORGINGS · CASTINGS · FOIL · POWDER

CCJ NEWSCAST

(CONTINUED FROM PAGE 98)

"as is." The list price of a new vehicle is lower than the delivered price which includes taxes, transportation and handling and preparation charges.

Highway Users Conference Increases State Service Staff

The state services of the National Highway Users Conference will be greatly expanded during the coming year. Eight eminently qualified men, including some who have been with the Conference several years, have just been assigned to further energize highway user objectives throughout the states. State services work is now under the direction of Russell E. MacCleery.

The present roster of field representatives is as follows: David McQuaid (Me., N. H., Vt., Mass., R. I.); William Duffy (N. Y., Conn., N. J.); Edmund C. Pusey (Pa., W. Va., Md., Va., Del.); Harold Gray (Wis., Mich., Ill., Ind., Ohio); Don Marti (N. D., S. D., Minn., Neb., Ia); H. B. Simpson, (Mont., Ida., Wyo., Utah, Colo., N. M.); W. G. Jamison (Wash., Ore., Calif., Nev., Ariz.); Tom Crooks (Kans., Mo., Okla., Tex., Ark). New representatives will be appointed for the southeastern states.

L. R. Buckendale Named President of SAE for 1946

L. Ray Buckendale, of Detroit, has been elected 1946 president of the Society of Automotive Engineers. Mr. Buckendale, who is engineering vice president of Timken-Detroit Axle Co., succeeds retiring SAE President James M. Crawford.

Mr. Buckendale, first native Detroiter to become SAE president, was born April 19, 1892. He was educated in Detroit public schools and University of Michigan, which conferred the degree Bachelor of Engineering. He became an engineer for Timken-Detroit and was granted leave of absence to serve during World War I as a captain in the Army's Ordnance department. As technical officer on tanks, he supervised production of the pilot model Mark VIII in the Locomobile plant at Bridgeport, Conn.



Ervin N. Hatch, senior automotive mechanical engineer of the New York Transit System, New York, was elected vice president in charge of Transportation and Maintenance Engineering at the SAE Annual Meeting in Detroit.

New Alemite Oil to Conform To Revised SAE Standards

Alemite Pennsylvania Motor Oil, heretofore marketed only as a straight run mineral oil, will hereafter be prepared with anti-oxidation and anti-corrosive additives to conform to the new American Petroleum Institute and Society of Automotive Engineers definitions of crankcase oils as a "premium motor oil," the Alemite division of Stewart-Warner Corp. has announced. The new oil, to be known as "Alemite Pennsylvania Motor Oil with P. A.," will be marketed at no advance in price.

(TURN TO PAGE 102, PLEASE)

THREE PRIME REQUISITES FOR POSITIVE, LASTING BLOCK REPAIRS!

1 K & W No. 700 BLOCK REPAIR KIT

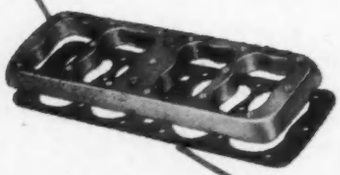
Contains everything needed to repair major engine block and head cracks by the guaranteed K & W Mechanical Method. One 700 Kit equips you for fast, economical block and head repairs—the most profitable work any service shop can do!



2 K & W PORTABLE CIRCULATOR

Used in conjunction with K & W Metallic Seal to locate and seal block cracks and to clean out rust, scale and foreign substances all in one operation. Assures substantial savings in time, labor and money on all types of cracked block work. Invaluable for internal cleaning of engine, blocks and radiators and other equipment employing liquid circulation. Services motor blocks whether in or out of the chassis.





3 K & W TEST HEADS

Eliminate all uncertainty in detection and repair of motor block cracks. Made of aluminum alloy for all car, truck and tractor engines. Complete with rubber gaskets.

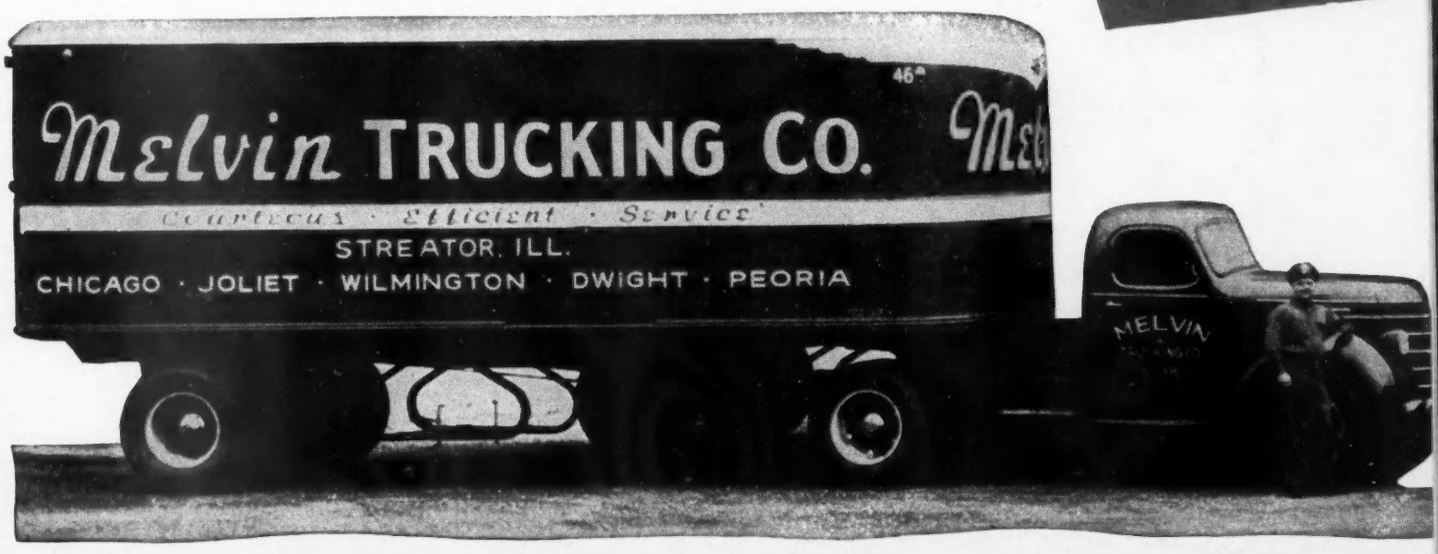
Ask your jobber about these K & W products today!
Manufactured by KERKLING & COMPANY, Bloomington, Indiana

K&W Metallic Seal
Guaranteed repair for 85 out of 100 block and head cracks immediately!

K&W Radiator Seal
Radiator Leak? Try K & W FIRST! If K & W can't fix it, NO SEAL can!

"Thermoid Brake Linings give longer life and more satisfaction than any we have used"

THE Melvin Trucking Company, of Illinois, operates two hundred and forty-five truck and semi-trailer units. They cover over 6,000,000 miles a year, through the states of Illinois, Indiana, Iowa, Wisconsin, Missouri and Kentucky. All of which adds up to a lot of wear and tear on brake lining. Melvin Trucking Company specify Thermoid Brake Lining for all of their units. They have been using Thermoid Products for over 8 years, so that when they say: "Thermoid Brake Linings give longer life and more satisfaction than any we have ever used," they speak from experience. You'll have the same experience when you test Thermoid Products on your fleet. Why not give them a trial?



Thermoid

Custom-Built Brake Lining Sets • CBB Sets • Thermo-Blocks for Heaviest Duty

THERMOID COMPANY • TRENTON, NEW JERSEY

CCJ NEWSCAST

(CONTINUED FROM PAGE 100)

Palm Bros. Offers Catalog

The Palm Bros. Decalcomania Co., Cincinnati, Ohio, has issued a new 8-page catalog describing effective "mobile" advertising with decals. In brilliant colors and profusely illustrated, the catalog is being offered to fleet operators to help them with advertising problems.

ATA Annual Meeting Highlights

FOLLOWING are major news events recorded by the annual meeting of the American Trucking Asso., Inc. in Cincinnati, Jan. 14 to 17:

Adopted a labor relations platform for trucking industry, calling for definition of legitimate practices of unions, regulation of unions, providing employers with same rights under the law as granted labor, opposition to compulsory arbitration, assailing so-called secondary picketing and an outline of the function of government in dealing with labor controversies.

Froze the number of ATA affiliated associations at present level and altered bylaws to require state associations to admit all types of carriers.

Decided to hold 1946 convention in Chicago next Fall, and 1947 convention in Los Angeles.

Adopted resolution urging Interstate Commerce Commission to allow emergency motor freight carrier rate relief at once and to investigate rate increases later if a need for inquiry appears necessary.

Approved resolution calling for repeal of 3 per cent transportation tax.

Safety and Operations Section decided to revise annual safety contest rules to eliminate wartime features and place it on peace-time basis.

Household Goods Carriers Conference named committee to promote establishment of all reciprocity principles by States.

Private Carrier Conference elected Fred Hufnagel, of Sun Oil Co., as chairman and decided to create a national advisory committee for drafting plans for enlargement of the Conference's activities.

Regular Common Carrier Conference proposed change in I.C.C. accounting to provide more detailed cost data, holding this necessary to justify pleas for rate increases.

Contract Carrier Conference opposed accounting change proposed by Common Carriers and asked to be specifically exempted from any change made.

Reelected Ted V. Rodgers as president for thirteenth year. Also all other general officials of the association.

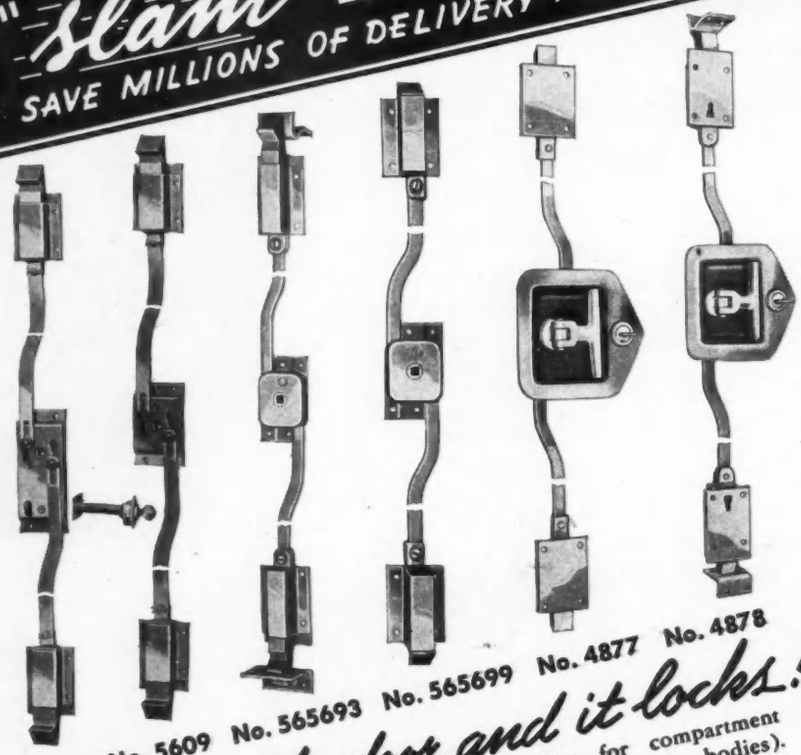


Fred J. Fandrei, new district representative for Maremont Automotive Products in Minnesota, North and South Dakota, Western Wisconsin and Northern Iowa

(TURN TO PAGE 120, PLEASE)

EBERHARD "slam" LOCKS

SAVE MILLIONS OF DELIVERY MINUTES!!



No. 5606 No. 5609 No. 565693 No. 565699 No. 4877 No. 4878

Just "slam the door and it locks!

With Eberhard "slam" locks the driver simply opens the door—removes his package and "slams" the door with knee or elbow.

Seconds saved each time multiply into minutes and minutes into valuable "man-hours".

Nos. 5606 and 5609 locks are for *heavy* doors. Nos. 565693 and 565699 for *medium* doors. Nos. 4877 and 4878 "Recesso" locks (with recessed folding handles for compartment doors of tank and utility bodies). All locks latch when doors are "slammed". Nos. 5606 and 5609-565693-4877 and 4878—"SLAM-TITE" also pull doors tightly against jambs. Nos. 5606-4877 and 4878 both "latch" and "lock" upon being slammed—offering protection to the loads.

You can use these locks profitably. Write for complete information.



No. 5603
A single point "RECESSO" slam lock.

EBERHARD MANUFACTURING CO.

DIVISION OF
EASTERN MALLEABLE IRON CO.
CLEVELAND, OHIO

AUTOMOBILE DESIGN

(CONTINUED FROM PAGE 96)

higher r.p.m.'s than before; also, because we did not know how to make good enough bearings or connecting rods.

One of the reasons why our connecting rods did not stand up was because of the split bearings on the big end, which were not round and could not be made round. The coming of the built-up crankshafts, with the Hirth or Dusevoir joint, give possibilities of small bearings, more service, less rubbing speed, and make possible the designing of engines to carry their loads at much higher speeds.

Also, new accuracies in equipment for heat treating methods, inspection systems, and the like, allow much greater accuracy of manufacture and lead to designing much closer to the line of failure without equivalent danger.

We will see the ordinary garden variety of low-cost automobile engine within the near future operating at a higher horsepower per cubic inch over longer periods than any present engine, much smoother running and easier to service. Power plants will undoubtedly be removable, as well, also the front end, and instrument assembly.

Further development will come through development of production techniques on new materials already available, new types of power plants, valves, fuel injection, fuels, oils, instruments, and the final production results of many laboratory techniques already developed.

What Autos Could Be

IF THE industry wants it, by 1947 they can have a car of Ford-Chevrolet-Plymouth size, with an oversized super-Cadillac interior, double the standard of heat and sound insulation in the body, half the weight of standard cars, twice the economy of present day cars in driving, a visibility which does away with corner posts and their very definite danger, greater simplicity of servicing, less space required in shipping, less equipment required in production and at service points—in all, as revolutionary an advance over the present day cars as is the fluorescent light over the tungsten, or the tungsten over the old yellow carbon filament lamps.

If the superiority of the new design is as obvious to the eye as it is in the lamp industry, then sales will be no problem, and this particular car will not be concerned with entering the price war of the Big Three, but can stand on its own merits in its own price field.

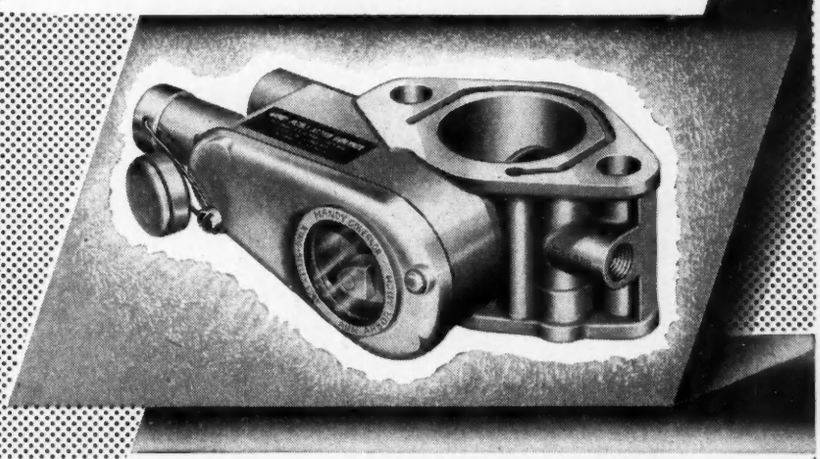
END

(Please resume your reading on P. 58)

Circo Offers Catalog

Circo Products Co., Cleveland, Ohio, has issued a new 8-page catalog featuring its line of degreasing units. Five new units are described, with photographs and specifications of each model. Detailed information is presented on the methods of operation of each cleaner and degreaser, as well as recommendations for solvents, for the best results in cleaning.

THE WAR DEBT WOULD HAVE BEEN LARGER *except for these Governors*



It is always vitally important for a military expeditionary force to conserve the motors and tires of its vehicles, its fuel and lubricant, due obviously to the difficulties of replacement. • Prewar records show that the use of King-Seeley Governors on trucks accounted for savings of 32% on engine repair, 23% on tire maintenance, 26% on lubricant costs, 15% on fuel, 30% on brake maintenance. • Just how these figures compare with operation of governed military vehicles is not known. But it is fair to assume the differences would not be great. • In excess of 1,100,000 King-Seeley Velocity Governors have been installed on military trucks, ducks and alligators—570,000 on one model of truck alone. • These same governors will later serve as well and with equal economy on commercial vehicles after the war has been won.

ARMY E NAVY

KING-SEELEY CORPORATION

ANN ARBOR MICHIGAN

MANUFACTURERS OF THE FAMOUS HANDY VISIBLE ACTION AND HANDY VARI-SPEED GOVERNORS

When is a truck expensive?...

You can measure the cost of a truck *two* ways —and only one is right!

You can go by the price of the truck when you buy—and go wrong. Or you can go by the *cost of the work it gives*—and come out right.

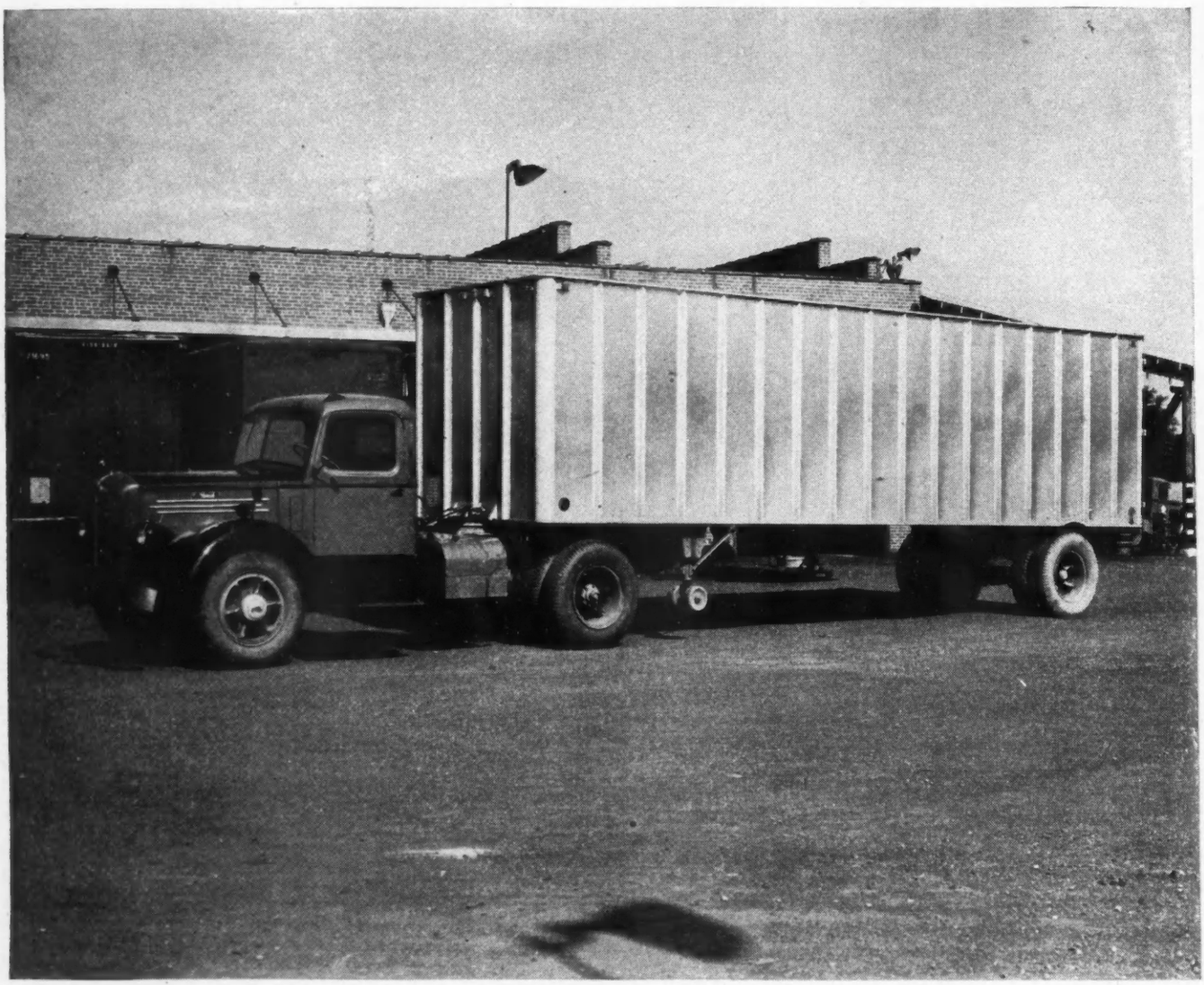
Mack trucks are *workers.* They're *built* that way, clear through. Regardless of their price when new, they're *bargains in work done before they're through!*

Mack case-hardened, generator-ground timing gears are so tough that none has *ever* had to be replaced from wear. That's an example of Mack quality standards and progress . . .

This means *longer years* of work—steadier work, with less time in the repair shop—*more hauling done for less net cost . . .*

The records of thousands of users of Mack trucks over 46 years bear out these facts.

Put a new Mack to work—*and learn what thrifty trucking really means!*



Mack Trucks, Inc., Empire State Bldg., New York 1, N. Y. Factories at Allentown, Pa.; Plainfield, N. J.; New Brunswick, N. J.; Long Island City, N. Y. Factory branches and dealers in all principal cities for service and parts.

Mack
TRUCKS
FOR EVERY PURPOSE



Performance Counts!

TRUCK SPECIFICATIONS TABLE

OF 1946 PRODUCTION MODELS

DATA SUPPLIED BY MANUFACTURERS AND TABULATED BY

COMMERCIAL CAR JOURNAL

KEY TO DEFINITIONS, REFERENCES AND ABBREVIATIONS

DEFINITIONS

MAKE AND MODEL

Only Domestic Truck Models are listed.

OPTIONAL UNITS

For the express purpose of best fitting the truck to the individual job most of the models listed can be provided with optional engines, transmissions, axles, etc., and these models when so equipped are considered standard stock models.

CHASSIS LIST PRICE

The chassis list price applies to the minimum standard wheelbase with standard tires and standard equipment. All prices are F.O.B. factory. Chassis list price does not include the price of the Cab unless otherwise noted.

RECOMMENDED GROSS VEHICLE WEIGHT FOR NORMAL SERVICE

The Gross Weights published herewith are those supplied by manufacturers as their Recommended Gross Vehicle Weights for Normal Operating Conditions, and are based upon the Maximum Authorized Tire Size listed. In actual practice the manufacturer may either increase or decrease the gross vehicle weight rating when either favorable or unfavorable operating conditions are involved. Since the proper performance of a motor truck depends upon many factors, including grades, road conditions, etc., the gross weights that a manufacturer is prepared to recommend will vary with particular conditions, and the manufacturer's own standard of safety factors. Specific recommendations, therefore, should be obtained from the manufacturer's representative.

CHASSIS WEIGHT

The chassis weight listed includes the weight of the minimum standard wheelbase chassis, with cowl, with standard tires, with standard equipment, with crankcase and cooling system full, and 5 gallons of fuel in the tank. It does not include the weight of the Cab. This applies to C.O.E. as well as conventional chassis types. Exceptions are noted.

STANDARD TIRE SIZE

The standard tire size listed is that which is included in the Chassis List Price.

MAXIMUM AUTHORIZED TIRE SIZE

The tire size listed in this column is the maximum size recommended by the manufacturer of the chassis for the Gross Vehicle Weight for Normal Operating Conditions. It is furnished at extra cost, if it differs from the standard size. Dual rears are understood; exceptions noted.

MINIMUM STANDARD WHEELBASE

The minimum standard wheelbase is the so-called standard wheelbase on which the Chassis List Price is based.

MAXIMUM STANDARD WHEELBASE

The maximum standard wheelbase is the extreme end of the standard range of wheelbases offered by the chassis maker.

MAXIMUM BRAKE HP.

Maximum Brake Horsepower at Given R.P.M. is actual dynamometer reading without accessories.

GEAR RATIO RANGE

Gear Ratio Range in High—Ratios within the range given are available at no extra cost. Exceptions are noted.

TRACTORS

Unless given the designation (N)—meaning not available as a tractor—all standard models may be assumed to be available as tractors. Exclusively Tractor models are designated (T).

KEY TO REFERENCES

c.f.—Cab Forward design.
c.o.e.—Cab-Over-Engine design.
(D)—Diesel-engine equipped.
(T)—Designed for tractor use only.
(C)—Converted Ford or Chevrolet Model.
(1) Chevrolet exceptions to definitions.

LIST PRICE

This is the list price of the basic vehicle which includes cab on all c.o.e. models. It does not include the additional charge as authorized by OPA for synthetic tires delivered after April 18, 1944. Models CK-OR-OS equipped with four and all other models equipped with six, normally standard size tires.

OPTIONAL UNITS

Chevrolet own rear axle (5.43:1) available at extra cost on models OR, OS and OW.

Chevrolet own 2-speed rear axle (5.64-8.22) available at extra cost on models OH, OI, OJ, OE, OF.

CHASSIS WEIGHT

The basic vehicle includes the weight of the cab on all c.o.e. models (OH-OI-OJ).

GROSS VEHICLE WEIGHT

With maximum tire equipment (at extra cost).

STANDARD TIRE SIZE

Refer to exceptions to chassis list price.

(2) International Harvester—Specifications shown represent only the basic standard chassis units and standard chassis ratings in keeping with definitions established by Commercial Car Journal. Optional units not shown such as engines, clutches, transmissions, axles or axle ratios, brakes, wheels and tires, frames or frame reinforcements, optional wheelbases or any other units which make up part of the truck chassis and which International will furnish and approve from the factory as optional equipment can or will change either the ratings, chassis weight shown or performance of the truck as indicated by this list.

Also the company reserves the privileges of assigning special gross vehicle ratings for any chassis providing in the opinion of our engineering department, the type of service justifies the new rating without decreasing the safety factor designed into the truck.

(a)—Available with Eaton Two-Speed Axle designated KS Models.

(b) Current models will include, at additional cost, certain items not considered standard equipment. These items are included in the specifications and are listed below—Model K-6, K-7 and K-6-F, oversize brakes; Model K-8, oversize engines and brakes; Model K-10, oversize engine, transmission and brakes; Model KR-11, oversize engine and transmission; Models K-8F and K-11-F, oversize engine and brakes.

KEY TO ABBREVIATIONS

MAKES—ALL

B—Bendix
BL—Brown-Lipe.
Bu or Bud—Buda.
C—Chevrolet.
Cl or Cla—Clark.
Con—Continental.
Cum—Cummins-Diesel.
Eat—Eaton.
F—Ford.
Fu—Fuller.
H—Hotchkiss.
Her—Hercules.
L—Lockheed.
LH—Lockheed front, Wagner "hi-Tork" rear.
LW—Lockheed front, Wisconsin rear.
M—Midland.
N.P.—New Process.
O or Ow—Own.
Op or Opt—Optional.
Shu—Shuler.
Spi—Spicer
T or Tim—Timken.
TW—Timken-Wisconsin.
WG—Warner Gear.
Wau—Waukesha.
W or Wis—Wisconsin.
Ws—Westinghouse.
WW—Westinghouse or Wagner

BRAKES—SERVICE

Location

4—Four Wheels, front and rear
4r—Four Wheels, rear only.

Type

I—Internal.
X—External.

Operation

A—Air.
H—Hydraulic.
V—Vacuum.

BRAKES—HAND

Location

C—Center of double propeller shaft.
2—Rear wheels.
4—Four wheels.
6—Six wheels.
P—Back of Power Divider.
J—Jackshaft.
T—Transmission.
F—Driveshaft.

Type

D—Tru-Stop disk.
I—Internal.
M—Mechanical.
X—External.
PD—Two drums on rear of power divider.

BRAKE DRUMS

Material

a—Cast alloy iron.
A—American Car Foundry.
c—Cast iron.
Cl—Copper iron.
Co—Composite.
D—Dayton.
E—Ermalite.
G—Gunite.
N—Nickel iron.

(Where a combination of any of the above is used, the first reference mark applies to the front and the second to the rear drums.)

FRAME

Type

C—Channel.
T—Channel tapered front and rear.
L—Channel reinforced with liner.
B—Channel reinforced with both liner and fishplate.
P—Channel reinforced with plate.
TL—Channel tapered front and rear reinforced with liner.
D—Drop Center
Tf—Tapered front.
A—Straight section sidemembers, lined with oak inserts.

GOVERNOR STANDARD

Y—Yes.
N—No.

REAR AXLE

Final Drive and Type

B—Bevel.
F—Full-floating.
Hy—Hypoid.
d—Dual range axle.
2—Double Reduction.
S—Spiral bevel.
W—Worm.
S—Semi-Floating
T—Torque Tube

Gear Ratios

(**) Only one ratio.

Drive and Torque

H—Hotchkiss (springs).
R—Radius Rods.
L—Parallel Torque Rods
T—Torque Arm.

WHEELS DRIVEN

2F—Forward unit of Rear Axle Group.
2R—Rear Unit of Rear Axle Group.
4R—Forward and rear units of Rear Axle Group.
6—All wheels.

Line Number	MAKE AND MODEL	Chassis List Price	WHEEL-BASE: Minimum Standard	WHEEL-BASE: Maximum Standard	Gross Vehicle Weight for Normal Service	Chassis Weight (See definition)	TIRE SIZES: D-dual rear S-single rear: Standard Front and Rear	TIRE SIZES: Maximum Authorized Tire Size (Duals unless noted)	ENGINE DETAILS: Make and Model	No. of Cylinders, Bore and Stroke	Displacement	Comp. Ratio	Torque lb. ft.	Max. Brake H.P. at R.P.M. Given	Main Bearings: Number, Diameter and Length	Governor Standard	TRANSMISSION: Make and Model	Forward Sp'ds	REAR AXLE: Make and Model	Gear and Type	Drive ✕ Torque	Gear Ratio Range in High	FRONT AXLE: Make and Model	BRAKES: SERVICE: Make Location Type Operat'n	Lining Area	Drum Area	Drum Material	Hand Location Type	C-A Dimensions (Min. Std. W. B.)	FRAME: Side Rail Dimensions	Type
1	Autocar.....C-50.....		200	200	23000	▲9500	10.00/20	10.00/22	Own 377	6–4x5	377	5.8	292	119–2800	7–3¼x11 7/8	Y	Own DF5	5	Own F	2SF	H	7.56–8.27	Tim 35100	Ws4IA	658	947	N	2I	120	9x3x¼	T
2	(T).....C-50-T.....		148	164	23000	▲8950	10.00/20	10.00/22	Own 377	6–4x5	377	5.8	292	119–2800	7–3¼x11 7/8	Y	Own DF5	5	Own F	2SF	H	7.56–8.27	Tim 35000	Ws4IA	594	838	N	2I	68	9x3x¼	T
3	(c.o.e.)....U-50.....		142	142	23000	▲8950	10.00/20	10.00/20	Own 377	6–4x5	377	5.8	292	119–2800	7–3¼x11 7/8	Y	Own UDF5	5	Own F	2SF	H	** –8.27	Tim 35100	Ws4IA	658	947	N	2I	120	9x3x¼	T
4	(c.o.e.)...U-50T.....		96	96	23000	▲8800	10.00/20	10.00/20	Own 377	6–4x5	377	5.8	292	119–2800	7–3¼x11 7/8	Y	Own UDF5	5	Own F	2SF	H	** –8.27	Tim 35100	Ws4IA	658	947	N	2I	74	9x3x¼	T
5	.....C-70.....		200	200	26000	▲10300	11.00/20	11.00/20	Own 447	6–4¼x5¼	447	5.7	352	133–2500	7–3¼x13 7/8	Y	Own TF5	5	Own F	2SF	H	7.56–8.27	Tim 27454	Ws4IA	658	947	N	CD	120	9x3x¼	T
6	.....C-70-S.....		200	200	26000	▲10400	11.00/20	11.00/20	Own 501	6–4¼x5¼	501	5.7	397	145–2500	7–3¼x13 7/8	Y	Own TF5	5	Own TK	2SF	H	7.28–8.51	Tim 27454	Ws4IA	658	947	N	CD	120	9x3x¼	T
7	(T).....C-70-T.....		148	164	26000	▲9400	10.00/20	11.00/20	Own 447	6–4¼x5¼	447	5.7	352	133–2500	7–3¼x13 7/8	Y	Own TF5	5	Own F	2SF	H	7.56–8.27	Tim 35000	Ws4IA	594	838	N	CD	68	9x3x¼	T
8	(T).....C-70-TS.....		148	164	28000	▲10100	11.00/20	11.00/22	Own 501	6–4½x5¼	501	5.7	397	145–2500	7–3¼x13 π	Y	Own TF5	5	Own TK	2SF	H	7.28–8.51	Tim 27454	Ws4IA	658	947	N	CD	68	9x3x¼	T
9	(e.u.s.)....U-70.....		128	163	26000	▲10900	11.00/20	11.00/22	Own 447	6–4¼x5¼	447	5.7	352	133–2500	7–3¼x13 7/8	Y	Own UTF5	5	Own F	2SF	H	7.56–8.27	Tim 27454	Ws4IA	658	947	N	CD	103¾	9x3x¼	T
10	(e.u.s.)....U-70S.....		128	163	28000	▲10900	11.20/20	11.00/22	Own 501	6–4½x5¼	501	5.7	397	145–2500	7–3¼x13 7/8	Y	Own UTF5	5	Own TK	2SF	H	7.28–8.51	Tim 27454	Ws4IA	658	947	N	CD	103¼	9x3x¼	T
11	(e.u.s.)....U-70T.....		109	109	26000	▲10250	11.00/20	11.00/22	Own 447	6–4¼x5¼	447	5.7	352	133–2500	7–3¼x13 7/8	Y	Own UTF5	5	Own F	2SF	H	7.56–8.27	Tim 27454	Ws4IA	658	947	N	CD	84¼	9x3x¼	T
12	(e.u.s.)..U-70TS.....		112	112	28000	▲10550	11.00/20	11.00/22	Own 501	6–4½x5¼	501	5.7	397	145–2500	7–3¼x13 7/8	Y	Own UTF5	5	Own TK	2SF	H	7.28–8.51	Tim 27454	Ws4IA	658	947	N	CD	87¼	9x3x¼	T
13	.....C-90.....		200	200	30000	▲11900	11.00/24	11.00/24	Own 501	6–4½x5¼	501	5.7	397	145–2500	7–3¼x13 7/8	Y	Own TF4&A3	12	Own G	2SF	H	** 8.76	Tim 27454	Ws4IA	739	1050	N	CD	120	10½x3x▲	T
14	†.....C-90D.....		171	171	44000	▲13300	11.00/24	12.00/24♦	Own 501	6–4½x5¼	501	5.7	397	145–2500	7–3¼x13 7/8	Y	OTF4, BL703	12	Tim 79746W	2SF	R	9.47–11.36	Tim 27453	Ws4IA	739	1050	N	CD	90	10½x3x▲	LTf
15	(T).....C-90T.....		148	164	30000	▲11050	11.00/22	11.00/24	Own 501	6–4½x5¼	501	5.7	397	145–2500	7–3¼x13 7/8	Y	Own TF5	5	Own G	2SF	H	7.40–8.76	Tim 27454	Ws4IA	658	947	N	CD	68	9x3x¼	T
16	(e.u.s.)....U-90.....		128	163	30000	▲11700	11.00/22	11.00/24	Own 501	6–4½x5¼	501	5.7	397	145–2500	7–3¼x13 7/8	Y	Own UTF5	5	Own G	2SF	H	7.40–8.76	Tim 27454	Ws4IA	658	947	N	CD	103¾	9x3x¼	T
17	(e.u.s.)...U-90T.....		109	109	30000	▲10900	11.00/22	11.00/24	Own 501	6–4½x5¼	501	5.7	397	145–2500	7–3¼x13 7/8	Y	Own UTF5	5	Own G	2SF	H	7.40–8.76	Tim 27454	Ws4IA	658	947	N	CD	84¼	9x3x¼	T
18	(D).....DC-100.....		215	215	▼45000	▲13200	10.00/20	10.00/22	Cum HB600	6–4⅞x6	672	17.	500	150–1800	7–4½x15¼	Y	BL7741, 703A	12	Own G	2SF	H	** 6.01	Tim 27454	Ws4IA	658	947	N	CD	126▲	9x3x¼	LTf
19	(D)†...DC 100D.....		158	158	54000	▲15400	12.00/24	12.00/24♦	Cum HBD600	6–4⅞x6	672	17.	500	150–1800	7–4½x15¼	Y	BL7741, 703	12	Tim 79746W	2SF	R	9.23–11.36	Tim 27453	Ws4IA	739	1050	N	CD	83▲	10½x3x▲	LTf
20	(D)(T) DC-100T.....		159	159	36000	▲12900	10.00/20	11.00/24	Cum HB600	6–4⅞x6	672	17.	500	150–1800	7–4½x15¼	Y	BL7741, 703A	12	Own G	2SF	H	6.01–7.40	Tim 27454	Ws4IA	658	947	N	CD	70▲	10½x3x¼	CTf
21	Available																													
22	.....CS200-SP.....		126	133	15000	.....	7.00/20D	7.50/20	Wau 6BM	6–3⅛x4¼	263	5.9	180	78–2800	7–2⅝x10¼	N	WG T9	4	Tim 53440H	8F	H	** –6.67	Tim 32502H	L4IH	.....	.....	a	TX	Opt	10x3x¼	T
23	.....C-250.....		105	....	18000	.....	8.25/20D	9.00/20	Wau 6BZ	6–4x4¼	320	5.9	210	95–2500	7–2⅝x10¼	N	Fu 5A330	■5	Tim 54411H	8F	R	6.83–7.4	Tim 32502H	L4IH	334	583	a	TX	Opt	10x3x¼	T
24	.....CS-250-SP.....		105	....	20000	.....	8.25/20D	9.00/20	Wau 6BZ	6–4x4¼	320	5.9	210	95–2500	7–2⅝x10¼	N	Fu 5A330	5	Tim 56410H	8F	R	6.83–7.4	Tim 32502H	L4IH	334	583	a	TX	Opt	10x3x¼	T
25	.....CS-400-LSP.....		105	....	21500	.....	9.00/20D	10.00/20	Wau 6BZ	6–4x4¼	320	5.9	210	95–2500	7–2⅝x10¼	N	Fu 5A330	5	Tim 56410H	8F	R	6.83–7.4	Tim 35000H	L4IH	334	583	a	TX	Opt	12x3x¼	T
26	.....CS-500-SP.....		105	....	22000	.....	9.00/20D	10.00/20	Wau 6MZA	6–4¼x4¾	404	5.9	286	112–2500	7–2⅝x12½	Y	Fu 5F430	5	Tim 56410H	8F	R	6.83–7.4	Tim 35000H	L4IH	334	583	a	TX	Opt	12x3x¼	T
27	.....CS-550-SP.....		105	....	24000	.....	9.00/20D	10.00/20	Wau 6MZA	6–4¼x4¾	404	5.9	286	112–2500	7–2⅝x12½	Y	Fu 5F430	5	Tim 58300H	8F	R	6.83–7.4	Tim 35000H	L4IH	380	660	a	TX	Opt	12x3x¼	T
28	.....CS-550-SPX.....		112	....	32000	.....	11.00/20D	11.00/20	Wau 6MZA	6–4¼x4¾	404	5.9	286	112–2500	7–2⅝x12½	Y	Fu 5F430	5	Tim 8200H	2F	R	** –7.84	Tim 26450H	L4IH	570	1051	a	TX	Opt	14x3x▲	T
29	.....CS-600.....		Opt	Opt	36000	.....	11.00/20	11.00/24	Wau 6SRKR	6–4⅝x5½	517	5.9	365	125–2300	7–2¾x12½	Y	Fu 5F430	5	Tim 8200PA	2F	R	** –7.84	Tim 27452TW	L4IH	722	1051	a	TX	Opt	14x3x▲	T
30	.....CS-600-SP.....		Opt	Opt	40000	.....	11.00/20	11.00/24	Wau 145GK	6–5¼x6	779	5.6	590	186–2000	7–3½x17¾	Y	Fu 5A920▽	5	Tim 8200PA	2F	R	6.42–7.84	Tim 27452TW	L4IH	722	1051	a	TD	Opt	14x3x▲	T
31	(D)CS-600-SP.Opt.....		Opt	Opt	40000	.....	11.00/20	11.00/24	Cum HB600	6–4⅞x6	672	17.	510	150–1800	7–4½x16½	Y	Fu 5A920▽	5	T SW3012PA	WF	R	** –6.16	Tim 27452TW	L4IH	.....	.....	A	TD	Opt	14x3x▲	T
32	Brockway.....78.....		138	164	13000	3965	6.00/20D	32x6	Con 24B	6–▲x4¼	210	6.0	154	71–3100	4–2¾x6	N	WG T9	4	Tim 53521H	8F	H	5.66–6.6	Tim 30000H	L4IH	255	402	a	TX	65▲	8x3x¼	T
33	.....83.....		138	176	14000	4100	6.50/20D	7.50/20	Con 25B	6–3⅞x4⅛	244	6.2	180	80.5–3100	4–2¾x6 ‖‖	N	WG T9	4	Tim 53521H	8F	H	5.66–6.6	Tim 30000H	L4IHV	255	402	a	TX	65▲	8x3x¼	T
34	.....88.....		150	176	15000	4500	6.50/20D	7.50/20	Con 25B	6–3⅞x4⅛	244	6.2	180	80.5–3100	4–2¾x6 ‖‖	N	WG T9	4	Tim 53307H	8F	H	6.2–6.8	Tim 30000H	L4IHV	298	477	a	TX	71▲	8x3x¼	T
35	.....92.....		156	188	16000	4770	7.00/20D	8.25/20	Con 25B	6–3⅞x4⅛	244	6.2	180	80.5–3100	4–2¾x6 ‖‖	N	WG T9	4	Tim 54411H	8F	H	5.83–6.8	Tim 31000H	L4IHV	329	580	a	CD	83▲	8x3x¼	T
36	.....94.....		156	188	18500	5050	7.50/20D	8.25/20	Con 25B	6–3⅞x4⅛	244	6.2	180	80.5–3100	4–2¾x6 ‖‖	N	BL B341	4	Tim 56411H	8F	H	6.16–7.4	Tim 31000H	L4IHV	370	660	a	CD	83▲	8x3x¼	T
37	.....112.....		150	188	18000	5150	7.00/20D	8.25/20	Con 38B	6–3¾x4¾	290	6.0	217	92–2800	7–2⅝x12▲	N	BL B341	4	Tim 54411H	8F	H	5.83–6.8	Tim 31000H	L4IHV	329	580	a	CD	77▲	8x3x¼	T
38	.....128.....		156	188	20000	5550	7.50/20D	8.25/20	Con 38B	6–3¾x4¾	290	6.0	217	92–2800	7–2⅝x12▲	N	BL B341	4	Tim 56411H	8F	H	5.71–7.4	Tim 31000H	L4IHV	370	660	a	CD	83▲	8x3x¼	T
39	.....146.....		126	206	20000	6060	8.25/20D	9.00/20	Con 40B	6–4x4⅝	330	6.0	245	104–2800	7–2⅝x12▲	Y	Fu 5A330	5	Tim 56411H	8F	R	5.76–7.4	Tim 32505H	L4IHV	370	660	a	CD	53	8x3x¼	T
40	(T).....147.....		132	164	.....	6000	8.25/20D	9.00/20	Con 40B	6–4x4⅝	330	6.0	245	104–2800	7–2⅝x12▲	Y	Fu 5A33	5	Eat A17-17000	SFd	H	Dual Rge.	Tim 32505H	L4IHV	370	660	a	CD	53	8x3x¼	T
41	.....152.....		126	206	22000	6350	8.25/20D	9.00/20	Con 41B	6–4½x4⅝	371	5.9	280	100–2500	7–2½x13½	Y	Fu 5A43	5	Tim 56411H	8F	R	5.71–6.83	Tim 32505H	L4IHV	370	660	a	CD	53	8x3x¼	T
42	(T).....153.....		132	164	.....	6400	8.25/20D	9.00/20	Con 41B	6–4½x4⅝	371	5.9	280	100–2500	7–2½x13½	Y	Fu 5A43	5	Tim 58300H	8F	H	6.14–7.8	Tim 32505H	L4IHV	370	660	a	CD	53	8x3x¼	T
43	(T).....154.....		132	164	.....	6300	8.25/20D	9.00/20	Con 41B	6–4½x4⅝	371	5.9	280	100–2500	7–2½x13½	Y	Fu 5A43	5	Eat A17-71000	SFd	H	Dual Rge.	Tim 32505H	L4IHV	370	660	a	CD	53	8x3x¼	T
44	(T).....156.....		132	164	.....	6950	9.00/20D	10.00/20	Con 42B	6–4▲x4⅝	405	5.7	305	112–2500	7–2½x13½	Y	Fu 5A43	5	Eat A9-20000	SFd	H	Dual Rge.	Tim 32505H	L4IHV	459	768	a	CD	53	8¼x3x▲	T
45	.....162.....		121	219	25000	7250	9.00/20D	10.00/20	Con 41B	6–4½x4⅝	371	5.9	280	100–2500	7–2½x13½	Y	Fu 5A43	5	Tim 58300H	8F	R	6.14–7.8	Shu 15785B	L4IHV	370	663	a	CD	51	8¼x3x▲	T
46	.....166.....		121	219	28000	7800	10.00/20D	11.00/20	Con 42B	6–4▲x4⅝	405	5.7	305	112–2500	7–2½x13½	Y	Fu 5A43	5	Wis 1337H	2F	R	5.63–8.59	Shu 15785B	L4IHV	459	772	a	CD	51	8¼x3x⅝	T
47	.....170X.....		153	219	25000	7960	9.00/20D	10.00/22	Con 33B	6–4½x4¾	381	4.7	276	106–2600	7–2¾x13 7/8	Y	Fu 5A62	5	Tim 72300H	2F	R	5.75–7.35	Shu 15785B	L4IHV	370	663	a	CD	83▲	8¼x3x▲	T
48	.....175X.....		153	219	30000	8559	9.00/20D	11.00/22	Con 34B	6–4¾x4¾	427	5.4	322	133–2600	7–2¾x13 7/8	Y	Fu 5A62	5	Wis 1337BH	2F	R	5.63–8.59	Shu 15785B	L4IHV	459	772	a	CD	83▲	8¼x3x⅝	T
49	.....195X.....		153	219	28000	8650	10.00/20D	11.00/22	Con 33B	6–4½x4¾	381	4.7	276	106–2600	7–2¾x13 7/8	Y	Fu 5A62	5	Wis 1337BH	2F	R	5.63–8.59	Shu 15785B	L4IHV	459	772	a	CD	83▲	8¼x3x⅝	T
50	.....220X.....		153	219	34000	9050	11.00/20D	12.00/24	Con 34B	6–4¾x4¾	427	5.4	322	133–2600	7–2¾x13 7/8	Y	Fu 5A62	5	Wis 1757H	2F	R	6.06–8.82	Shu 15795B	L4IHV	536	899	a	CD	83▲	8¼x3x⅝	T
51	.....240X.....		153	219	30000	8590	10.00/20D	11.00/24	Con 35B	6–4½x5¼	501	5.4	370	144–2400	7–2¾x13 7/8	Y	Fu 5A62	5	Wis 1337BH	2F	R	5.63–7.52	Shu 15785B	L4IHV	459	772	a	CD	83▲	8¼x3x⅝	T
52	.....260X.....		195	219	34000	9720	11.00/22D	12.00/24	Con 35B	6–4½x5¼	501	5.4	370	144–2400	7–2¾x13 7/8	Y	Fu MHU	4	Wis 1757H	2F	R	6.06–8.82	Shu 15795B	L4IHV	536	899	a	CD	125▲	8¼x3x⅝	T
53	.....260S.....		195	219	36000	10000	11.00/24D	12.00/24	Con 35B	6–4½x5¼	501	5.4	370	144–2400	7–2¾x13 7/8	Y	Fu MHU	4	Wis 1757H	2F	R	6.06–8.82	Shu 15795B	LW4IDV	600	899	a	CD	125▲	8¼x3x⅝	B
54	Chevrolet...(1)CK	637	115	115	■4600	2270	6.00/16-48	6.50/16-8	Own Regular	6–3⅛x3¾	216	6.5	174	90–3300	4–2¾x5 7/8	N	Own	3	Own Regular	Hy$	T	** –4.11	Own	O4IH	161	242	a	2I	38¼	5¼x2¼x▲	C
55	.....(1)OR	770	134	134	■11000	3070	•6.50/20-8	7.00/20-10	Own Regular	6–3⅛x3¾	216	6.5	174	90–3300	4–2¾x5 7/8	N	Own	4	Own Regular	□HyF	H	** –6.17	Own	O4IH	329	478	a	2I	57¾	7x2¾x7/8	P
56	.....(1)OS	800	160	160	■11000	3285	•6.50/20-8	7.00/20-10	Own Regular	6–3⅛x3¾	216	6.5	174	90–3300	4–2¾x5 7/8	N	Own	4	Own Regular	□HyF	H	** –6.17	Own	O4IH	329	478	a	2I	83¼	7x2¾x7/8	P
57	(SchoolBus)(1)OW	960	160	160	■11700	3585	6.50/20D	7.00/20-10	Own Regular	6–3⅛x3¾	216	6.5	174	90–3300	4–2¾x5 7/8	Y	Own	4	Own Regular	□HyF	H	** –6.17	Own	O4IH	329	478	a	2I	N	7x2¾x7/8	P
58	(School-Bus (1)OG	1170	195	195	■14000	4130	7.50/20D	8.25/20-10	Own Regular	6–3 7/8x3 11/16	235	6.6	192	93–3100	4–2¾x5 7/8	Y	Own	4	Own Regular	□HyF	H	** –6.17	Own	O4IH	329	478	a	2I	N	7½x2 11/16x1¼	P
59	(c.o.e.)....(1)OH	1310†	109	109	■14000	•3614	7.50/20D	8.25/20-10	Own Regular	6–3 7/8x3 11/16	235	6.6	189	90–3100	4–2¾x5 7/8	Y	Own	4	Own Regular	□HyF	H	** –6.17	Own	O4IH	329	478	a	2I	62½	7x2¾x7/8	P
60	(c.o.e.)....(1)OI	1335†	132	132	■14000	•3679	7.50/20D	8.25/20-10	Own Regular	6–3 7/8x3 11/16	235	6.6	189	90–3100	4–2¾x5 7/8	Y	Own	4	Own Regular	□HyF	H	** –6.17	Own	O4IH	329	478	a	2I	86	7x2¾x7/8	P
61	(c.o.e.)....(1)OJ	1350†	158	158	■14000	•3924	7.50/20D	8.25/20-10	Own Regular	6–3 7/8x3 11/16	235	6.6	189	90–3100	4–2¾x5 7/8	Y	Own	4	Own Regular	□HyF	H	** –6.17	Own	O4IH	329	478	a	2I	111½	7x2¾x7/8	P
62	.....OE	1100	134	134	■14000	3840	7.50/20D	8.25/20-10	Own Regular	6–3 7/8x3 11/16	235	6.6	192	93–3100	4–2¾x5 7/8	Y	Own	4	Own Regular	□HyF	H	** –6.17	Own	O4IH	329	478	a	2I	57¾	7x2¾x7/8	P
63	.....OF	1120	160	160	■14000	3935	7.50/20D	8.25/20-10	Own Regular	6–3 7/8x3 11/16	235	6.6	192	93–3100	4–2¾x5 7/8	Y	Own	4	Own Regular	□HyF	H	** –6.17	Own	O4IH	329	478	a	2I	83¼	7x2¾x7/8	P
64	Corbitt (T)...18TG.....		137	137	18000	‡7200	9.00/20	10.00/20	Con M6330	6–4x4¾	330	5.7	240	102–2800	7–2⅝x12	Y	Fu 5A330	5	Tim 56410PA	8F	H	** –6.17	Tim 32502TW	Ws4IA	....	744	a	TX	60½	7¾x3¼x▲	T
65	(T).....22TG.....		145	145	22000	‡8500	10.00/20	10.00/22	Con B6427	6–4▲x4⅝	427	6.1	332	127–2600	7–2¾x13½	Y	Fu 5A43	5	Tim 58300PA	8F	H	** –5.25	Tim 35000TW	Ws4IA	....	847	a	TX	60½	8x3¼x¼	T
66	(T).....25TG.....		148	148	25000	‡9600	10.00/22	11.00/22	Con R6513	6–4½x5⅝	513	5.9	400	165–2600	7–3¼x14½	Y	Fu 5A620	5	Tim 58415PA	8F	H	** –6.14	Tim 35100TW	Ws4IA	....	946	a	2	60½	8½x3¼x▲	T
67	(T).....28TG.....		148	148	28000	‡9800	10.00/22	11.00/24	Con R6602	6–4½x5⅝	602	6.0	460	185–2600	7–3¼x14½	Y	Fu 5A650	5	Tim 8200PA	2F	H	** –6.42	Tim 26450W	Ws4IA	....	1159	a	TD	60½	8½x3¼x▲	T
68	(D) (T)...22TD.....		145	145	22000	‡8700	10.00/20	10.00/22	Her DWXD	6–4¼x4¼	404	....	330	146–2600	7–.....	Y	Fu 5A430	5	Tim 98415PA	dF	H	6.53–8.53	Tim 35000TW	Ws4IA	....	847	a	TX	60½	8¾x¼x¼	T
69	(D) (T)...25TD.....		148	148	25000	‡9800	10.00/22	11.00/22	Her DRXC	6–4⅝x5¼	529	....	400	140–2000	7–3½x13¾	Y	Fu 5A620	5	Tim 98415PA	dF	H	6.53–8.53	Tim 35100TW	Ws4IA	....	946	a	2	60½	8¼x3¼x▲	T
70	(D) (T)...27TD.....		152	152	27000	‡10000	10.00/22	11.00/24	Cum HB6	6–4⅞x6	672	17.	500	150–1800	7–4½x16½	Y	Fu 5A420	5	Tim 58415PA	8F	H	** –5.14	Tim 26450W	Ws4IA	....	1055	a	2	60½	8¼x3¼x▲	T
71	(D) (T)...28TD.....		155	155	28000	‡10400	10.00/22	11.00/24	Cum NHB6	6–5½x6	742	....	575	200–2100	7.....	Y	Fu 5A920	5	Tim 8200PA	2F	H	** –6.42	Tim 26450W	Ws4IA	....	1159	a	TD	60½	8¼x3¼x▲	T
72	.....18BG.....		137	Opt	18000	.....	9.00/20	10.00/20	Con M6330	6–4x4¾	330	5.7	240	102–2800	7–2⅝x12	Y	Fu 5A330	5	Tim 56410H	8F	H	** –6.17	Tim 32502H	L4IHV	....	578	a	TX	.....	8x3¼x¼	T
73	.....22BG.....		145	Opt	22000	.....	10.00/20	10.00/22	Con B6371	6–4½x4⅝	371	5.7	280	100–2500	7–2½x13½	Y	Fu 5A430	5	Tim 58300H	8F	H	** –6.14	Tim 35000H	L4IHV	....	660	a	TX	.....	8x3¼x¼	T

‡ Weight of complete truck tractor less fifth wheel. ‡ Rear 9.00/20 10-ply. ■ See optional units. ■ See exception to Gross Vehicle Weight.
• 6.00/20–6 front, 6.50/20 rear. ° See exceptions to chassis weight definition. ▽ Rating applies with 3rd axle. ▽ or Fu 3A92 with 3 forward speeds. ▲ Includes Cab.
♦ Front; rear 14.00/24. ◆ and Brown Lipe 703 † Dump truck models.



WE make these surveys right along, and they result in a common-sense plan to assure correct application of the right lubricants. Briefly, this is what the Shell Lubrication Engineer will provide:

1. Survey and analysis of the lubrication requirements of your plant, engines and machines.

2. Recommendations of proper lubricants, together with specific instructions as to when and how they should be used.

3. Scheduled check-ups for all critical or unusual machinery.

4. Reports (if you want reports) about the performance and economies of recommended lubricants in use in your equipment. To the Shell Lubrication Engineer, though, the best report is short and sweet: "All machines continuously in service, well lubricated."

* * *

Right here we ought to warn you that the Shell Lubrication Engineer isn't going to tell you everything you're doing is wrong—he may, in fact, find very little fault with the lubricants and procedure you are now using.

Then, too, he will come to you without a rigid set of rules. Your lubricating procedures are probably based on pretty sound experiences that your own folks have had. Your problem is really one of picking out the weak spots before they become trouble spots . . .

So call the Shell Lubrication Engineer for that survey. If your property is so large that he needs help, he will have it. You are bound to gain, if it is only peace of mind!

There is no obligation on your part.

Call your local Shell Representative, or write Shell Oil Company, Incorporated, 50 W. 50th Street, New York 20, N. Y., or 100 Bush Street, San Francisco 6, California.

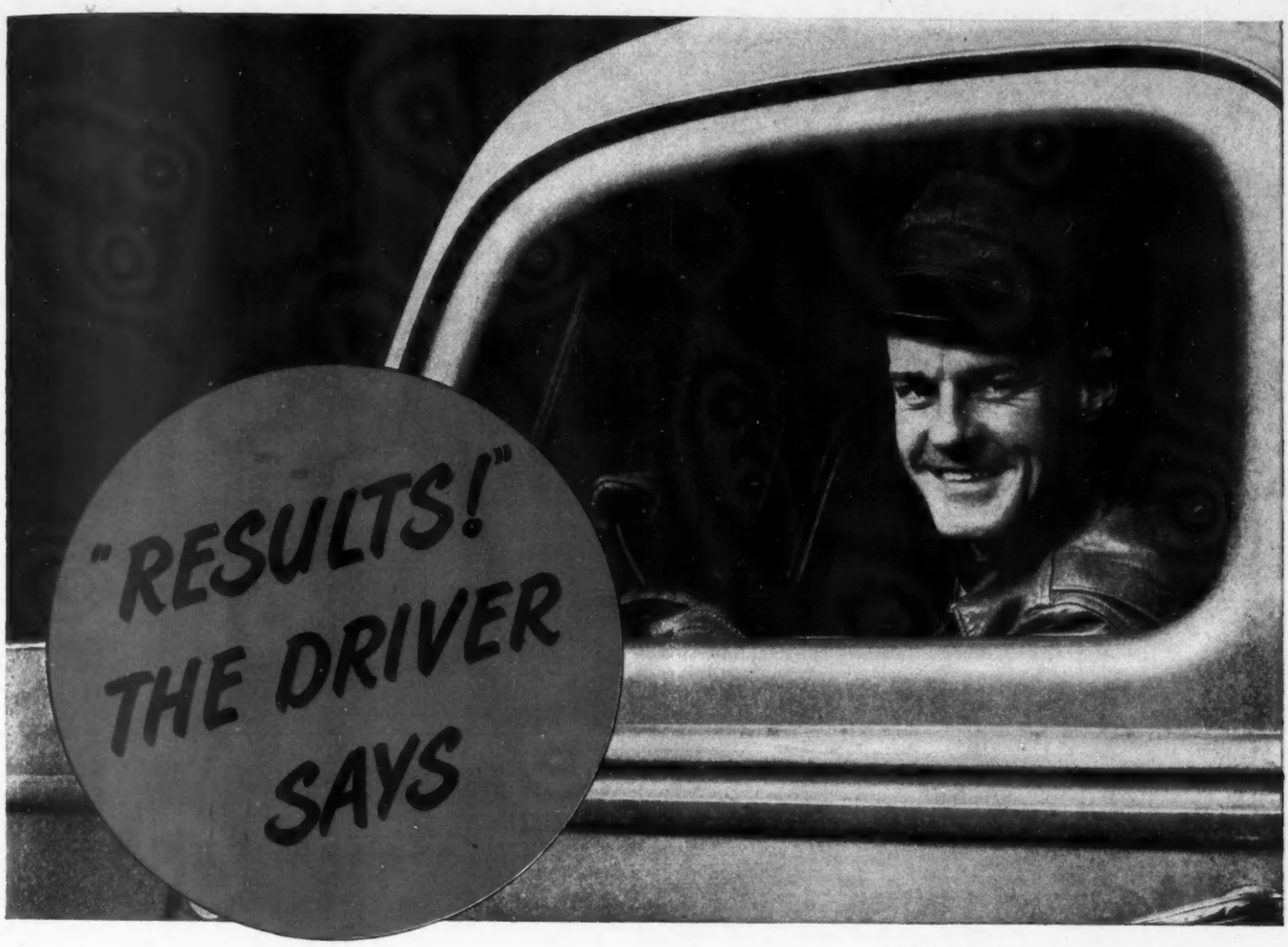
SHELL INDUSTRIAL LUBRICANTS

SHELL

Line Number	MAKE AND MODEL	Chassis List Price	WHEEL-BASE Minimum Standard	WHEEL-BASE Maximum Standard	Gross Vehicle Weight for Normal Service	Chassis Weight (See definition)	TIRE SIZES D-dual rear S-single rear Standard Front and Rear	TIRE SIZES Maximum Authorized Tire Size (Duals unless noted)	ENGINE DETAILS Make and Model	No. of Cylinders, Bore and Stroke	Displacement	Comp. Ratio	Torque lb. ft.	Max. Brake H.P. at R.P.M. Given	Main Bearings Number, Diameter and Length	Governor Standard	TRANSMISSION Make and Model	Forward Sp'ds	REAR AXLE Make and Model	Gear and Type	Drive & Torque	Gear Ratio Range in High	FRONT AXLE Make and Model	BRAKES SERVICE Make	Location	Type	Operat'n	Lining Area	Drum Area	Drum Material	Hand Location Type	C-A Dimension (Min. Std. W. B.)	FRAME Side Rail Dimensions	Type
1	Corbitt 25BG		148	Opt	25000		10.00/22	11.00/22	Con B6427	6–4⅛x4¼	427	6.1	332	127–2600	7–2⅛x13½	Y	Fu 5A430	5	Tim 58415PA	SF	H	** –6.14	Tim 35100TW	Ws4IA				946	a	TX		8¼x3¼x⅛	T
2	Cont'd 28BG		148	Opt	28000		11.00/22	11.00/24	Con R6513	6–4½x5⅝	513	5.9	400	165–2600	7–3¼x14½	Y	Fu 5A430	5	Tim 8200PA	2F	H	** –6.42	Tim 26450W	Ws4IA				1159	a	TD		10½x3x¼	Tf
3	(D) 18BD		137	Opt	18000		9.00/20	10.00/20	Her DJXC	6–3¾x4½	298		208	83–2600	7–3x10⅛		Fu 5A330	5	Tim 96710PA	dF	H	6.08–8.12	Tim 32502TW	Ws4IA				744	a	TX		8x3¼x¼	T
4	(D) 25BD		148	Opt	25000		10.00/22	11.00/22	Her DWXD	6–4¼x4¾	404		330	146–2600	7–		Fu 5A430	5	Tim 98415PA	dF	H	6.53–8.53	Tim 35000TW	Ws4IA				847	a	TX		8½x3¾x⅛	T
5	Diamond T 404HH		139	175	14700	5000	8.25/20D	8.25/20	Her CBJXE	6–3½x4¼	245	5.7	174	77–2800	7–2¼x10	Y	WG T9A	4	Eat A35-1350	SF	H	Dual Rge.	Cla F450	L4IHV	363	522	A	TX	60	8⅛x3½x¼	T
6	509		139	175	14700	5200	8.25/20D	8.25/20	Her CBJXC◆	6–3¾x4¼	282	5.9	214	86–2800	7–2¼x10	Y	WG T9A	4	Eat A35-1350	SF	H	Dual Rge.	Cla F450	L4IHV	363		A	TX	60	8⅛x3½x¼	T
7	509SC		106	151	14700	5300	8.25/20D	8.25/20	Her CBJXC◆	6–3¾x4¼	282	5.9	214	86–2800	7–2¼x10	Y	WG T9A	4	Eat A7-1350	SF	H	Dual Rge.	Cla F452	L4IHV	363		A	TX	60	8⅛x3½x¼	T
8	614H		139	175	18800	6200	9.00/20	9.00/20	Her CBJXD	6–4x4¼	320	5.9	228	96–2800	7–2¼x10	Y	Cla 250V	5	Eat A34-18000	SF	H	Dual Rge.	Cla F450	L4IHV	377		A	TD	60	8⅛x3½x¼	T
9	702		130	142	23000	8200	10.00/20D	10.00/20	Her WXLC-3	6–4⅛x4¾	404	5.9	300	114–2800	7–2¼x13¼	Y	Cla 270V	5	Eat A14-18001	SF	R	Dual Rge.	Tim 35100TW	Ws4IA	618		A	TD	60	10x3½x¼	T
10	806H		154	190	28000	9400	11.00/20D	11.00/20	Her CBWXLC3	6–4⅛x4¾	404	5.9	300	114–2800	7–2¼x13¼	Y	Spi 6241-6031	12	Tim U200P	SF	R	** –7.84	Tim 35100TW	Ws4IA	722		A	TD	84	10⅛x3¼x⅛	T
11	900		154	154	30000	10000	10.00/22D	10.00/22	Her RXLC	6–4½x5¼	529	5.4	365	132–2100	7–3¼x13¼	Y	Spi 6241-703	12	Tim U200P	2F	R	** –7.04	Tim 36020TW	Ws4IA	722		A	TD	84	10¼x3¼x⅛	T
12	(D) 910		172	172	36000	12300	10.00/22D	10.00/20	Cum HB600	6–4⅞x6	672	17.	500	150–1800	7–4½x16¾	Y	Spi 7851, 703	15	Tim U200P	2F	R	** –7.04	Tim 36020TW	Ws4IA	722		A	TD	90½	10¾x3¼x⅛	T
13	Dodge WC		116	116	4200		6.00/16	5.25/20S	Own	6–3¼x4⅛	217	6.8	172	95–3600	4–2¼x4	N	NP	3	Own	Hy S	H	3.70–4.70	Own	O4IH	148	251	CI	TX	40	6⅛x2⅛x⅛	
14	WF31		135	135	13500		6.00/20‡	8.25/20	Own	6–3⅛x4¼	236	6.8	190	115–3800	4–2½x5	N	NP	4	Own	Hy F	H	5.10–6.80	Own	O4IH	252	406	CI	TX	60	7x2¾x.21	P
15	WF32		160	160	13500		6.00/20‡	8.25/20	Own	6–3⅛x4¼	236	6.8	190	115–3800	4–2½x5	N	NP	4	Own	Hy F	H	5.10–6.80	Own	O4IH	252	406	CI	TX	84	7x2¾x.21	C
16	WFM38		159	159	13500		6.00/20‡	8.25/20	Own	6–3⅛x4¼	236	6.8	190	115–3800	4–2½x5	N	NP	4	Own	Hy F	H	5.10–6.80	Own	O4IH	252	406	CI	TX	114	7½x2⅛x⅛	P
17	WFA31		135	135	14000		6.00/20‡	8.25/20	Own	6–3⅛x4¼	236	6.8	190	115–3800	4–2½x5	N	NP	4	Eat	SFd	H	Dual Rge.	Own	O4IH	252	406	CI	TX	60	7x2¾x.21	P
18	WFA32		160	160	14000		6.00/20‡	8.25/20	Own	6–3⅛x4¼	236	6.8	190	115–3800	4–2½x5	N	NP	4	Eat	SFd	H	Dual Rge.	Own	O4IH	252	406	CI	TX	84	7x2¾x.21	
19	WH47		160	160	15000		6.50/20	8.25/20	Own	6–3⅛x4½	250	6.8	200	120–3800	4–2½x5	N	NP	5	Own	Hy F	H	5.10–7.10	Own	O4IHV	335	609	CI	TX	84	8⅛x3⅛x⅛	
20	WH45		136	136	15000		6.50/20	8.25/20	Own	6–3⅛x4½	250	6.8	200	120–3800	4–2½x5	N	NP	5	Own	Hy F	H	5.10–7.10	Own	O4IHV	335	609	CI	TX	60	8⅛x2½x1⅛	P
21	WHA45		136	136	16000		6.50/20	8.25/20°	Own	6–3⅛x4½	250	6.8	200	120–3800	4–2½x5	N	NP	5	Eat	SFd	H	Dual Rge.	Own	O4IHV	335	609	CI	TX	60	8⅛x2½x1⅛	P
22	WFMA38		159	159	14000		6.50/20	8.25/20	Own	6–3⅛x4¼	236	6.8	190	115–3800	4–2½x5	N	NP		Eat	SFd	H	Dual Rge.	Own	O4IH	252	406	CI	TX	114	7½x2⅛x⅛	
23	WD20		120	120	6400		6.50/16▲	6.50/16	Own	6–3¼x4⅜	230	6.8	184	105–3600	4–2½x4	N	NP	3	Own	Hy F	H	3.90–4.89	Own	O4IH	190	293	CI	TX	44	6½x2⅛x⅛	
24	WD21		133	133	6400		6.50/16▲	6.50/16	Own	6–3¼x4⅜	230	6.8	184	105–3600	4–2½x4	N	NP	3	Own	Hy F	H	3.90–4.89	Own	O4IH	190	293	CI	TX	57	6½x2⅛x⅛	
25	WF33		190	190	13500		6.00/20‡	8.25/20	Own	6–3⅛x4¼	236	6.8	190	115–3800	4–2½x5	N	NP	4	Own	Hy F	H	5.10–6.80	Own	O4IH	252	406	CI	TX	114	7½x2⅛x¼	
26	WFA33		190	190	14000		6.00/20‡	8.25/20	Own	6–3⅛x4¼	236	6.8	190	115–3800	4–2½x5	N	NP	4	Eat	SFd	H	Dual Rge.	Own	O4IH	252	406	CI	TX	114	7½x2⅛x¼	
27	WH46		148	148	15000		6.50/20	8.25/20	Own	6–3⅛x4½	250	6.8	200	120–3800	4–2½x5	N	NP	5	Own	Hy F	H	5.10–7.10	Own	O4IHV	335	609	CI	TX	72	8⅛x2⅛x⅛	
28	WHA46		148	148	16000		6.50/20	8.25/20°	Own	6–3⅛x4½	250	6.8	200	120–3800	4–2½x5	N	NP	5	Eat	SFd	H	Dual Rge.	Own	O4IHV	335	609	CI	TX	72	8⅛x2⅛x⅛	
29	WHA47		160	160	16000		6.50/20	8.25/20°	Own	6–3⅛x4½	250	6.8	200	120–3800	4–2½x5	N	NP	5	Eat	SFd	H	Dual Rge.	Own	O4IHV	335	609	CI	TX	84	8⅛x2⅛x⅛	
30	WH48		178	178	15000		6.50/20	8.25/20°	Own	6–3⅛x4½	250	6.8	200	120–3800	4–2½x5	N	NP	5	Own	Hy F	H	5.10–7.10	Own	O4IHV	335	609	CI	TX	102	8⅛x2⅛x⅛	
31	WHA48		178	178	16000		6.50/20	8.25/20°	Own	6–3⅛x4½	250	6.8	200	120–3800	4–2½x5	N	NP	5	Eat	SFd	H	Dual Rge.	Own	O4IHV	335	609	CI	TX	102	8⅛x2⅛x⅛	
32	WH49		220	220	15000		6.50/20	8.25/20	Own	6–3⅛x4½	250	6.8	200	120–3800	4–2½x5	N	NP	5	Own	Hy F	H	5.10–7.10	Own	O4IHV	335	609	CI	TX	144	8⅛x2⅛x⅛	
33	WHA49		220	220	16000		6.50/20	8.25/20°	Own	6–3⅛x4½	250	6.8	200	120–3800	4–2½x5	N	NP	5	Eat	SFd	H	Dual Rge.	Own	O4IHV	335	609	CI	TX	144	8⅛x2⅛x⅛	
34	WHM45		105	105	15000		6.50/20	8.25/20	Own	6–3⅛x4½	250	6.8	200	120–3800	4–2½x5	N	NP	5	Own	Hy F	H	5.10–7.10	Own	O4IHV	335	609	CI	TX	60	8⅛x2⅛x⅛	
35	WHMA45		105	105	16000		6.50/20	8.25/20°	Own	6–3⅛x4½	250	6.8	200	120–3800	4–2½x5	N	NP	5	Eat	SFd	H	Dual Rge.	Own	O4IHV	335	609	CI	TX	60	8⅛x2⅛x⅛	
36	WHM48		159	159	15000		6.50/20	8.25/20	Own	6–3⅛x4½	250	6.8	200	120–3800	4–2½x5	N	NP	5	Own	Hy F	H	5.10–7.10	Own	O4IHV	335	609	CI	TX	114	8⅛x2⅛x⅛	
37	WHMA48		159	159	16000		6.50/20	8.25/20°	Own	6–3⅛x4½	250	6.8	200	120–3800	4–2½x5	N	NP	5	Eat	SFd	H	Dual Rge.	Own	O4IHV	335	609	CI	TX	114	8⅛x2⅛x⅛	
38	WFM35		105	105	13500		6.50/20	8.25/20	Own	6–3⅛x4¼	236	6.8	190	115–3800	4–2½x5	N	NP	4	Own	Hy F	H	5.10–6.80	Own	O4IH	252	406	CI	TX	60	7x2¾x⅛	
39	WFMA35		105	105	14000		6.50/20	8.25/20	Own	6–3⅛x4¼	236	6.8	190	115–3800	4–2½x5	N	NP	4	Eat	SFd	H	Dual Rge.	Own	O4IH	252	406	CI	TX	60	7x2¾x⅛	
40	WFM37		129	129	13500		6.50/20	8.25/20	Own	6–3⅛x4¼	236	6.8	190	115–3800	4–2½x5	N	NP	4	Own	Hy F	H	5.10–6.80	Own	O4IH	252	406	CI	TX	84	7⅛x2⅛x1¼	
41	WFMA37		129	129	14000		6.50/20	8.25/20	Own	6–3⅛x4¼	236	6.8	190	115–3800	4–2½x5	N	NP	4	Eat	SFd	H	Dual Rge.	Own	O4IH	252	406	CI	TX	84	7⅛x2⅛x1¼	
42	Duplex T		136	190	18000	6000	7.50/20D	9.00/20	Her JXD	6–4x4¼	320	6.2	240	113–3000	7–2½x10	Y	Fu 5B33	5	Tim 56410	2F	H	** –6.83	Tim 32502	L4IHV	420	654	A	TX	59	9x3½x⅛	C
43	R		144	190	25000	8820	8.25/20D	10.00/20	Her WXLC-3	6–4¼x4¾	404	5.8	290	139–2600	7–2¾x13¼	Y	Fu 5A43	5	Tim 98415	2F	R	6.53–8.53	Tim 35000	L4IHV	730	1016	A	TX	79¼	9x3½x⅛	C
44	SAC-H		166	210	28000	9800	10.00/20D	11.00/20	Her RXB	6–4½x5½	501	5.4	360	121–2200	7–3x14	Y	Fu 5A620	5	Tim S-200P	2F	R	** –9.81	Tim 26450	Ws4IA	912	1311	A	TX	79	10¼x3⅛x⅛	C
45	KH		166	210	32000	10500	10.00/20D	11.00/20	Her RXC	6–4½x5⅝	529	5.4	395	132–2200	7–3x14¼	Y	Fu 5A620	5	Tim U-200	2F	R	** –9.81	Tim 26450	Ws4IA	912	1311	A	TX	79	10½x3⅛x⅛	C
46	Federal 18M		146	194	15000	4700	8.25/20D		Her JXBF	6–3⅝x4¼	263	6.5	189	93–3000	7–2½x10	N	WG T9	4	Tim 54412DP	SF	H	** –5.83	Tim 30003H	LT4IHV	314	532	a	TX	67	8½x2⅛x⅛	* T
47	18M2		146	194	15000	4830	8.25/20D		Her JXBF	6–3⅝x4¼	263	6.5	189	93–3000	7–2½x10	N	WG T9	4	Tim 94440DP	dF	H	6.06–8.11	Tim 30003H	LT4IHV	314	532	a	TX	67	8½x2⅛x⅛	* T
48	29M		146	194	20000	5500	9.00/20D		Her JXDF	6–4x4¼	320	6.5	230	109–2800	7–2½x10	N	Cla 205V	5	Tim 56410DP	SF	H	** –6.83	Tim 32514H	LT4IHV	390	654	a	TX	67	8½x2⅛x⅛	* T
49	29M2		146	194	20000	5690	9.00/20D		Her JXDF	6–4x4¼	320	6.5	230	109–2800	7–2½x10	N	Cla 205V	5	Tim 96710DP	dF	H	6.07–8.12	Tim 32514H	LT4IHV	390	654	a	TX	67	8½x2⅛x⅛	* T
50	29MA		155	194	20000	5950	9.00/20D		Her JXDF	6–4x4¼	320	6.5	230	109–2800	7–2½x10	N	Cla 205V†	5	Tim 58301DP	SF	H	** –6.83	Tim 32514H	LT4IHV	466	820	a	TD	76	8½x2⅛x⅛	* T
51	45M		143	203	24000	7975	10.00/20D		Con B6427	6–4⅜x4⅛	427	6.1	332	128–2600	7–2¼x13½	Y	Cla 270VO	5	Tim 58301P	SF	R	** –6.83	Tim 35011TW	TW4IA	606	933	a	TD	60½	10x3½x¼	* T
52	45M2		143	203	24000	8350	10.00/20D		Con B6427	6–4⅜x4⅛	427	6.1	332	128–2600	7–2¼x13½	Y	Cla 270VO	5	Tim 98415P	dF	R	6.53–8.53	Tim 35011TW	TW4IA	606	933	a	TD	60½	10x3½x¼	* T
53	55M		143	203	27000	8600	11.00/20D		Con B6427	6–4⅜x4⅛	427	6.1	332	128–2600	7–2¼x13½	Y	Cla 270VO	5	Tim S-200P	2F	R	** –7.08	Tim 36021TW	TW4IA	722	1051	a	TD	60½	10x3½x¼	* T
54	55MA		155	203	27000	8880	11.00/20D		Con B6427	6–4⅜x4⅛	427	6.1	332	128–2600	7–2¼x13½	Y	Cla 270V†	5	Tim S-200P	2F	R	** –7.08	Tim 36021TW	TW4IA	722	1051	a	TD	72½	10x3½x¼	* T
55	60MA		155	203	28000	9715	11.00/20D		Con 22R	6–4½x5¼	501	5.4	384	148–2400	7–2¾x14½	Y	Cla 326V◆	5	Tim S-200P	2F	R	** –7.08	Tim 36021TW	TW4IA	722	1051	a	TD	72½	10x3½x¼	* T
56	60M2		143	203	28000	6960	11.00/20D		Con 22R	6–4½x5¼	501	5.4	384	148–2400	7–2¾x14½	Y	Cla 326V	5	Tim S300P	dF	R	6.53–8.53	Tim 36021TW	TW4IA	722	1051	a	TD	60½	10x3½x¼	* T
57	Ford 598T	♦985	158	158	13500	4240	7.50/20D	8.25/20-10	Own 59T	8–3⅛x3¼	239	6.4	180	100–3800	3–2½x4.71	N	Own 59T	4	Own 01T	FS	H	** –6.67	Own 01T	O4IH	303	563	c	TX	84.06	7x2.75x.21	CTf
58	(school bus) 594T	♦995	194	194	14500	3990	7.50/20D	8.25/20-10	Own 59T	8–3⅛x3¾	239	6.4	180	100–3800	3–2½x4.71	N	Own 59T	4	Own 01T	FS	H	** –6.67	Own 01T	O4IH	303	563	c	TX	.....	7x2.75x.21	CTf
59	Hudson (½T. Pkp)		128	128	4810		6.50/16-6	6.50/16-6	Own 58	6–3x5	212	6.5	168	102–4000	3– ▲▲	N	Own	3	Own	S ‡	H	** –4.55	Own	B4IH	141	242	C	2I	42½	7⅛x1¼x⅛	B
69	Intern'l (2) K-1	690	113	125	4400	2250	6.00/16-4	7.00/16	Own GRD214	6–3⅛x4½	213	6.3	160	82–3400	4–2½x6	N	Own HD8	3	Own R1050	8$	H	3.72–5.11	Own F50	L41H	164	316	e	FX	38	6x2¼x¼	C
70	K-1-M	700	102	113	4600	2150	6.00/16-4	6.50/16-6	Own GRD214	6–3⅛x4½	213	6.3	160	82–3400	4–2½x6	N	O SA-HD8-A	3	Own R1050	8$	H	3.72–5.11	Own F150	L41H	164	316	e	FX		6½x2¼x	C
65	K-2	695	125	125	5200	2285	6.00/16-4	7.00/16-6	Own GRD214	6–3⅛x4½	213	6.3	160	82–3400	4–2½x6	N	Own HD8	3	Own R1050	8$	H	3.72–5.11	Own F50	L41H	164	316	e	FX	50	6⅛x2¼x⅛	C
60	K-3	810	130		6650	2970	7.00/16-6	7.50/16-6	Own GRD214	6–3⅛x4½	213	6.3	160	82–3400	4–2½x6	N	Own HD8-A	3	Own R1150	8F	H	4.22–5.28	Own F150	L41H	195	367	c	FX	55	6½x2⅛x⅛	C
66	K-3-M		113	113	7000	2685	7.00/16-6	7.50/16-8	Own GRD214	6–3⅛x4½	213	6.3	160	82–3400	4–2½x6	N	Own H41B	4	Own R1150	8F	H	4.22–5.28	Own F150	L41H	221	367	c	TX		6½x2¼x⅜	C
61	(a)(b) K-5	900	135	177	13500	3585	6.00/20D	8.25/20	O-GRD 233	6–3⅛x4½	233	6.3	181	93–3400	4–2¼x6	N	Own H41B	4	Own R1360	8F	H	5.28–7.16	Own F350	LH4IH	294	509	e	TX	60	8x3x⅛	C
67	(a)(b) K-6	1315	134	176	14500	4475	6.50/20-6	8.25/20-10	Own BLD250	6–3⅛x4½	251	6.3	200	100–3200	4–2¾x5	N	Own F51	5	Own R1450	8F	H	5.62–7.16	Own F470	LH4IHV	368	633	e	TX	60	8¼x3x⅛	T
62	(a)(b) K-7	1585	134	176	16500	4810	7.00/20D	9.00/20	O-BLD 269	6–3⅛x4½	269	6.3	222	100–3000	4–2.7x5	N	Own F51	5	Own R1560	8F	H	6.50–7.16	Own F470	LH4IHV	399	681	e	TX	60	8¼x3x⅛	T
63	(a)(b) K-8	2400	137	197	20000	6155	7.50/20D	10.00/20	O-RED 361	6–4⅛x4½	361	6.3	282	126–3000	7–3¼x10	Y	Own F51	5	Own R1570	8F	H	6.43–8.51	Own F550	LH4IHV	475	811	e	PX	60	8¼x3½x⅞	T
68	(a)(b) K-10		149	197	22500	7195	9.00/20	11.00/20	Own RED401	6–4½x5	401	6.3	318	140–2800	7–3¼x10	Y	Own F54	5	Own R1670	8F	H	6.43–8.05	Own F650	LH4IHV	552	654	e	FX	72	9¼x3½x⅛	T
64	(a)(b) KR-11	4225	149	197	27000	8100	9.00/20D	12.00/20	O-RED 450	6–4½x5	450	6.3	360	148–2600	7–3¼x10	Y	Own F54	5	Own R1700	28F	H	6.42–8.05	Own F750	WW4IA	616	1030	G	PX	72	10x3½x⅛	T

† Main transmission; auxiliary, Brown-Lipe 6031, 3 forward speeds. ◆ Main transmission; auxiliary, Brown-Lipe 703, 3 forward speeds. ▲ Rear 7.00/16S ° Rear 9.00/20D ‡ Rear 6.50/20D ▲ 7.50/20 front. ▲▲—Diameter Front 2.343, Center 2.375, Rear 2.406. Total length–5.750. * For other than minimum standard WB–8⅛x2⅛x¼. ◆ For other than minimum standard WB–10½x3½x⅛. ◆Or CBJxB 6-3½x4¼

♦ Prices listed are authorized by O.P.A. for the basic chassis, with cab and body if specified. The engine specifications and tire sizes indicated are for "heavy duty" equipment which is supplied at extra charge. Distribution and delivery charges, federal, state and local taxes and optional equipment are extra.



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Line Number	MAKE AND MODEL	Chassis List Price	WHEEL-BASE Minimum Standard	WHEEL-BASE Maximum Standard	Gross Vehicle Weight for Normal Service	Chassis Weight (See definition)	TIRE SIZES D-dual rear S-single rear Standard Front and Rear	TIRE SIZES Maximum Authorized Tire Size (Duals unless noted)	ENGINE DETAILS Make and Model	No. of Cylinders, Bore and Stroke	Displacement	Comp. Ratio	Torque lb. ft.	Max. Brake H.P. at R.P.M. Given	Main Bearings Number, Diameter and Length	Governor Standard	TRANSMISSION Make and Model	TRANSMISSION Forward Sp'ds	REAR AXLE Make and Model	REAR AXLE Gear and Type	REAR AXLE Drive & Torque	REAR AXLE Gear Ratio Range in High	FRONT AXLE Make and Model	BRAKES SERVICE Make Location Type Operation	BRAKES SERVICE Lining Area	BRAKES SERVICE Drum Area	BRAKES SERVICE Drum Material	BRAKES Hand Location Type	C-A Dimensions (Min. Std. W. B.)	FRAME Side Rail Dimensions	FRAME Type
1	Kenworth (D) ..521	.....	156	205	32000	12200	10.00/20	11.00/22	Cum NHB6	6–5½x6	743	17.	565	200–2100	7–4½x16½	Y	BL 7841	4	Tim U200P	DR	H	6.42–7.84	Tim 36000	Ws4IA	646	1050	a	TD	72	9½x3¼x⅜	C
2	Reo 19BHS	.....	145	145	14000	4349	8.25/20D	8.25/20	Own GC245	6–3½x4¼	245	6.2	191	89–3100	7–2⅝x10.6	Y	Cla 185F	4	Tim 54427	2	H	6.06–8.12	Tim 30000	L4IHV	327	478	c	TX	84	9x3x¼	T
3	.....19BHS	.....	145	145	14000	4205	7.50/20D	7.50/20	Own GC245	6–3½x4¼	245	6.2	191	89–3100	7–2⅝x10.6	Y	Cla 185F	4	Tim 54412	SF	H	** –6.8	Tim 30000	L4IHV	327	478	c	TX	84	9x3x¼	T
4	.....19CHS	.....	165	165	14000	4402	8.25/20D	8.25/20	Own GC245	6–3½x4¼	245	6.2	191	89–3100	7–2⅝x10.6	Y	Cla 185F	4	Tim 54412	SF	H	** –6.8	Tim 30000	L4IHV	327	478	c	TX	84	9x3x¼	T
5	.....20BHS	.....	145	165	15500	5147	8.25/20D	9.00/20	Own GC288	6–3½x5	288	6.2	221	94–3000	7–2⅝x10.6	Y	Cla 205V	4	Tim 54427	SF	H	** –6.16	Tim 30000	L4IHV	327	478	c	TX	105	9x3x¼	T
6	.....20XHS	.....	130	130	15500	4985	8.25/20D	8.25/20	Own GC288	6–3½x5	288	6.2	221	94–3000	7–2⅝x10.6	Y	Cla 205V	5	Tim 56427	SF	H	** –6.16	Tim 31104	L4IHV	352	....	c	TX	84	9x3x¼	T
7	.....20XHS	.....	130	130	15500	4842	8.25/20D	8.25/20	Own GC288	6–3½x5	288	6.2	221	94–3000	7–2⅝x10.6	Y	Cla 205V	4	Tim 94427	SF	H	** –6.16	Tim 30000	L4IHV	352	....	c	TX	84	9x3x¼	T
8	.....25VBS	.....	145	145	24000	7655	10.00/20D	10.00/20	Con 6427	6–4⅜x4⅞	427	6.1	324	127–2600	7–2⅞x11⅛	Y	Cla 205V	5	Tim 96000	2	H	6.06–8.12	Tim 31000	L4IHV	352	....	c	TX	69⅝§	9¼x3⅞x⅜x⅜	T
9	.....25VBS	.....	145	145	24000	7505	10.00/20D	10.00/20	Con 6427	6–4⅜x4⅞	427	6.1	324	127–2600	7–2⅞x11⅛	Y	Cla 270V■	5	Tim S-200P	2F	H	** –7.84	Tim 35000	Ws4IA	476	....	c	TX	70	9¼x3¼	T
10	.....25VXS	.....	130	130	24000	7445	10.00/20D	10.00/20	Con 6427	6–4⅜x4⅞	427	6.1	324	127–2600	7–2⅞x11⅛	Y	Cla 270V	5	Tim S-200P	2F	H	** –7.84	Tim 35000	Ws4IA	476	....	c	TX	85	9¼x3⅜x⅜x⅜	T
11	Sterling....HD115	.....	155	185	32000	10200	10.00/20D	11.00/20	Con R6513	6–4½x5½	513	5.9	400	156–2600	7–3¼x14⅝	Y	Fu 5A623	15	Tim S-2000P	2F	R	** –7.84	Rim 26450W	Ws4IA	800	1286	a	TX	76	9¾x3⅜x⅜x⅜	A
12	.....HC115	.....	155	185	32000	10100	10.00/20D	11.00/24	Wau 6SRKR	6–4⅜x5⅛	517	5.5	369	125–2250	7–3x13¼	Y	Fu 5A623	15	Own 137W	C2	R	7.40–9.38	Tim 26450W	Ws4IA	726	1240	a	TX	76	9x3¼x¼	A
13	(D)....HC115H	.....	176	211	32000	12000	10.00/20D	11.00/24	Cum HB600	6–4⅛x6	672	17.	500	150–1800	7–4½x16½	Y	Fu 4B865	12	Own 137W	C2	R	7.40–9.38	Tim 26450W	Ws4IA	726	1240	a	TX	76	9x3¼x¼	A
14	.....HC144	.....	155	175	36000	10500	10.00/22D	12.00/24	Wau 6SRKR	6–4⅜x5⅛	517	5.5	369	125–2250	7–3x13¼	Y	Fu 5A623	15	Own 144W	C2	R	8.27–9.38	Tim 26450W	Ws4IA	726	1240	a	TX	88	9x3¼x¼	A
15	.....HC145	.....	155	175	36000	10500	10.00/22D	12.00/24	Wau 6SRKR	6–4⅜x5⅛	517	5.5	369	125–2250	7–3x13¼	Y	Fu 5A623	15	Own 144W	C2	R	8.27–9.38	Tim 26450W	Ws4IA	786	1278	a	TX	76	9¼x3⅜x⅜x⅜	A
16	.....HC147	.....	....	....	36000	10900	10.00/22D	12.00/24	Wau 6SRKR	6–4⅜x5⅛	517	5.5	369	125–2250	7–3x13¼	Y	Fu 5A623	15	Own 146W	C2	R	8.27–9.38	Tim 26450W	Ws4IA	786	1278	a	TX	76	9¼x3⅜x⅜x⅜	A
17	.....HC156	.....	....	....	40000	11900	11.00/24D	12.00/24	Wau 6SRKR	6–4⅜x5⅛	517	5.5	369	125–2250	7–3x13¼	Y	Fu 5A623	15	Own 147W	C2	R	8.27–9.38	Tim 26450W	Ws4IA	786	1278	a	TX	76	9¼x3⅜x⅜x⅜	A
18	.....HC165	.....	155	....	40000	12000	11.00/24D	12.00/24	Wau 6SRKR	6–4⅜x5⅛	517	5.5	369	125–2250	7–3x13¼	Y	Fu 5A623	15	Own 156W	C2	R	8.18–9.27	Tim 27454W	Ws4IA	786	1270	a	TX	76	9¼x3⅜x⅜x⅜	A
19	(D).....HC165H	.....	165	175	40000	13500	11.00/24D	12.00/24	Cum HBD600	6–4⅛x6	672	17.	500	150–1800	7–4½x16½	Y	Fu 4B865	12	Own 165W	C2	R	8.18–9.27	Tim 27454W	Ws4IA	786	1270	a	TX	76	9¼x3⅜x⅜x⅜	A
20	(D).....HC175H	.....	165	175	45000	14000	12.00/24D	13.00/24	Cum HBD600	6–4⅛x6	672	17.	500	150–1800	7–4½x16½	Y	Fu 4B865	12	Own 175W	C2	R	8.18–9.27	Tim 27454W	Ws4IA	786	1270	a	TX	77	9¼x3⅜x⅜x⅜	A
21	Stewart.....47B	.....	134	205	13000	4900	6.50/20	8.25/20	Wau 6BM	6–3⅝x4¼	262	5.7	175	77–2800	7–2⅝x10¼	N	WG T9	4	Cla R950	BF	H	6.37–6.88	Cla F268	L4IHV	285	512	c	T	54	8½x2¾x¼	T
22	.....49B	.....	144	224	19500	5950	7.00/20	9.00/20	Wau 6BZ	6–4x4¼	318	5.7	210	86–3000	7–2⅝x10⅞	Y	Fu 5B330	5	Tim 56400	SF	R	5.83–7.80	Cla 450	L4IHV	408	742	E	T	64	10x2¾x⅞	T
23	.....58B	.....	140	228	22000	7100	7.50/20	11.00/20	Wau 6MZR	6–4¼x4¾	404	5.3	300	105–2500	7–2⅝x12½	Y	Fu 5B430	5	Eat 1801	SF	R	** –7.16	Tim 35000	L4IHV	478	848	E	T	64‡‡	10x2¾x⅞	T
24	.....59B	.....	140	228	25000	7490	8.25/20	11.00/20	Wau 6MZR	6–4¼x4¾	404	5.3	300	105–2500	7–2⅝x12½	Y	Fu 5B430	5	Eat 2680	2F	R	** –8.50	Tim 35100	L4IHV	510	990	E	T	64‡‡	10x2¾x⅞	T
25	.....38B	.....	140	228	27000	8250	9.00/20	11.00/20	Wau 6SRKR	6–4⅜x5½	517	5.5	369	110–2400	7–3x13¼	Y	Fu 5A620	5	Tim 200V	2F	R	7.37–8.64	Eat 570	L4IHV	510	990	E	T	64	10x2¾x⅞	T
26	Studebaker....M5	.....	113	113	4500	2210	6.50/16S	6.50/16S	Own 1M	6–3x4	170	6.5	134	80–4000	4–2⅛x5⅛	N	Own 664949	3	Own 663597	Hy	H	** –4.82	Own 664307	L4IH	157	276	Co	2I	45‡‡	7⅛x2⅛x⅜x⅜	T
27	.....M15A-20	.....	120	120	7800	2850	7.00/17S	7.00/20S	Own 2M	6–3x4	170	6.5	134	80–4000	4–2⅛x5⅛	N	Own 673674	4	Own 664435	SF	H	5.66–6.60	Own 673625	L4IH	216	342	a	TX	52‡‡	7⅛x2‡‡x⅜x⅜	T
28	.....M15A-28	.....	128	128	10000	3085	7.50/17S	7.00/20	Own 2M	6–3x4	170	6.5	134	80–4000	4–2⅛x5⅛	N	Own 673674	4	Own 664435	SF	H	5.66–6.60	Own 673625	L4IH	216	342	a	TX	52‡‡	7⅛x2‡‡x⅜x⅜	T
29	.....M16	.....	128	195	13500	3510	7.00/20D	8.25/20	Own 3M	6–3⅞x4¾	226	6.5	176	94–3600	4–2½x5‡‡	N	Own 674989	4	Own 665174	SF	H	6.60–5.66	Own 673625	L4IH	216	342	a	TX	52‡‡	8⅛x2⅝x⅜x⅜	T
30	(2 spd. R.axle)M16	.....	128	195	15000	3880	7.00/20D	8.25/20D△	Own 3M	6–3⅞x4¾	226	6.5	176	94–3600	4–2½x5‡‡	Y	Own 674989	4	Own 665171	SF	H	5.66–6.66	Own 664452	L4IH	280	442	a	TX	60‡‡	8⅛x2‡‡x⅜x⅜	T
31	Truckstell(C) F18-5	.....	140	194	18500	▲5265	7.50/20*	10.00/20	Ford	8–3⅛x3¾	239	6.4	176	100–3800	–2½x5¼	N	Ford	12	Cla R1300	SF	H	5.12–6.83	Ford	L4IHV	355	610	a	TX	65¾	7½x3x.47	CT†
32	(C).....C18-5	.....	144	197	18500	▲5395	7.50/20*	10.00/20	Chevrolet	6–3⅛x3‡‡	235	6.6	192	93–3100	4–2¾x5⅛	N	Chevrolet	12	Cla R1300	SF	H	5.12–6.83	Chevrolet	L4IHV	355	610	a	TD	67	7½x3x.47	CT†
33	Ward La Fr....D-1	.....	149	220	25000	9500	10.00/20	10.00/20	Con B6427	6–4⅛x4⅞	427	6.1	325	127–....	7–2⅞x13½	Y	Fu 5A430	5	Tim 58415PA	B	R	** –6.14	Tim 35011 TW	Ws4A	600	928	c	TM	103½	9½x3x¼	....
34	.....D-1B	.....	149	220	25000	9500	10.00/20	11.00/20	Con 22R	6–4½x5¼	501	5.4	384	148–....	7–2¾x14½	Y	Fu 5A620	5	Tim 58415PA	B	R	** –6.14	Tim 35011 TW	Ws4A	600	928	c	TM	103½	9½x3x¼	....
35	.....D-1C	.....	149	220	29000	9500	11.00/20	11.00/24	Con B6427	6–4⅛x4⅞	427	6.1	325	127–....	7–2⅞x13½	Y	Fu 5A430	5	Tim S-200P	S2	R	** –7.84	Tim 35011 TW	Ws4A	673	1031	c	TM	103½	9½x3x¼	....
36	.....D-2	.....	149	220	29000	12000	11.00/20	11.00/24	Con R6513	6–4½x5¾	513	5.9	405	180–....	7–3¼x14½	Y	Fu 5A620	5	Tim S-200P	S2	R	** –7.84	Tim 35011 TW	Ws4A	673	1031	c	TM	103½	9½x3x¼	....
37	.....D-3	.....	149	220	30000	12000	11.00/22	12.00/24	Con R6572	6–4¼x5¾	572	5.9	454	198–....	7–3¾x14½	Y	Fu 5A650	5	Tim U200P	S2	R	** –7.84	Tim 26458W	Ws4A	750	1159	c	TM	103½	10x3x⅞	....
38	(D).....D-5	.....	155	226	35000	12500	11.00/22	12.00/24	Cum HB600	6–4⅛x6	672	17.	500	150–....	7–4½x16¾	Y	Fu 5A650	5	Tim U200P	S2	R	** –7.84	Tim 26458W	Ws4A	750	1159	c	TM	103½	10x3x⅞	....
39	.....FD-0	.....	186	....	.....	12000	11.00/20	11.00/24	Con 22R	6–4½x5¼	501	5.4	384	148–....	7–2¾x14½	Y	Fu 5A620	5	Tim R3100W	S2	R	** –8.15	Tim F3100W	Ws4A	627	1029	c	TM	99¾	9½x3x⅞	....
40	.....FD-1	.....	186	....	37000	12000	11.00/20	11.00/24	Con R6602	6–4⅞x5⅝	602	6.2	472	206–....	7–3¼x14½	Y	Fu 5A650	5	Tim R462W	S2	R	** –8.15	Tim F3100W	Ws4A	627	1029	c	TM	99¾	10x3x⅞	....
41	(D).....FD-2	.....	186	....	37000	12500	11.00/22	11.00/24	Cum HB600	6–4⅛x6	672	17.	500	150–....	7–4½x16¾	Y	Fu 5A920	5	Tim R462W	S2	R	** –8.15	Tim F3100W	Ws4A	627	1029	c	TM	99¾	10x3x⅞	....
	Four-Wheel-Drive																														
42	Corbitt.....18FG	.....	Opt	Opt	18000	6600	8.25/20	9.00/20	Con M6330	6–4x4¾	330	5.7	240	102–2800	7–2⅝x12	Y	Fu 5A33	5	Tim 56410H	SF	H	** –6.83	Tim F35H	L4IHV	....	578	a	TD	Opt	8x3¼x¼	T
43	.....22FG	.....	159	Opt	22000	.....	9.00/20	10.00/20	Con B6371	6–4½x4⅝	371	5.7	280	100–2500	7–2⅛x13½	Y	Fu 5A43	5	Tim R2090H	2F	H	** –8.43	Tim F2090H	L4IHV	....	868	a	TD	74	9x3x¼	T
44	.....25FG	.....	Opt	Opt	25000	.....	10.00/22	11.00/22	Con R6513	6–4½x5¾	513	5.9	400	165–2600	7–3¼x14½	Y	Fu 5A62	5	Tim R3100W	2F	H	** –8.14	Tim F3100W	Ws4IA	....	1030	a	TD	Opt	10½x3x¼	Tf
45	.....28FG	.....	Opt	Opt	28000	.....	11.00/22	11.00/24	Con R6602	6–4⅞x5⅞	602	6.0	460	185–2600	7–3¼x14½	Y	Fu 5A65	5	Tim R462W	2F	H	** –8.14	Tim F3100W	Ws4IA	....	1030	a	TD	Opt	10½x3x¼	Tf
46	FWD.....HA	.....	156	144	17000	▲7470	8.25/20D	10.00/20	Wau BZ	6–4x4¼	320	5.9	223	95–2800	7–2⅝x10¼	Y	Own H	5	Own H	SF	H	6.6 –9.06	Own H	L4IHV	391	807	a	T4	79½	9x3x¼	T
47	.....HR	.....	156	144	20000	▲8000	9.00/20	10.00/20	Wau MZR	6–4¼x4¾	404	5.7	270	98–2500	7–2⅝x12⅝	Y	Own H	5	Own H	SF	H	6.6 –9.06	Own H	L4IHV	391	807	a	T4	79½	9x3x¼	T
48	.....HG	.....	154	154	20000	▲8050	9.00/20	10.00/20	Wau MZR	6–4¼x4¾	404	5.7	270	98–2500	7–2⅝x12⅝	Y	Own H	5	Own H	SF	H	6.6 –9.06	Own H	L4IHV	391	807	a	T4	79½	9x3x¼	T
49	.....SU	.....	150	150	25000	▲10420	11.00/20D	12.00/20	Wau SRKR	6–4⅜x5½	517	5.5	365	126–2400	7–3x13¼	Y	Own U	5	Own U	BF	H	6.7 –9.8	Own U	L4IHV	496	867	a	T4	89¾	7⅛x3x‡‡	C
50	.....M7	.....	150	150	38000	▲15400	12.00/20D	12.00/20	Wau 145GK	6–5¼x6	779	5.6	585	186–2000	7–3½x17¾	Y	Own M	4	Ford	S	H	** –6.67	Own M5	F.....H	302	563	a	F	60⅛	7x2¾x⅜	T
51	(D).....M7	.....	150	150	38000	▲15700	12.00/20D	12.00/20	Cum HB600	6–4⅛x6	672	17.	500	150–1800	7–4½x16¾	Y	Own M	10	Wis R462	2F	H	** –7.53	Wis F409	Ws4IA	578	976	a	T4	90	10⅛x3x‡‡	CCC
52	Marmon- 440-4	6825	158	158	20700	▲8700	9.00/20D	10.00/20	Her WXLC3	6–4¼x4⅜	404	5.4	293	118–2800	7–2⅝x8¾	Y	Fu 5A430	5	Tim R2090W	2B	H	** –8.43	Tim F2090W	W....A	584	887	c	F	62	9‡‡x3x¼	T
53	Herr.....555-4	8525	161	161	24000	▲10200	10.00/20D	11.00/20	Her RXC	6–4⅝x5¼	529	6.3	390	131–2200	7–3x9½	Y	Fu 5A620	5	Tim R3100W	2B	H	** –8.15	Tim F3100W	W....A	692	1039	c	F	62	10⅛x3x⅞	T
54	(C)....CMM5-4	866	134	134	13500	▲4847	7.50/20D	7.50/20	Ford	8–3⅛x3¾	239	6.4	176	100–3500	3–2½x4.71	N	Ford	4	Ford	S	H	** –6.67	Own M5	F.....H	302	563	a	F	60⅛	7x2¾x⅜	T
55	(C)....CMM6-4	888	158	158	13500	4973	7.50/20D	7.50/20	Ford	8–3⅛x3¾	239	6.4	176	100–3500	3–2½x4.71	N	Ford	4	Ford	S	H	** –6.67	Own M5	F.....H	303	563	a	F	84⅛	7x2¾x⅜	T
56	.....MHDVL-1	.....	90	118	8500	4300	7.50/16S	8.25/18S	Willys MB	4–3⅛x4⅜	134	6.4	105	60–4000	3–2.33x5.48	Y	Own	3	None	....	....	7.10 (Fr.)	Own	4IH	202	3x7	M2	....	....	....	....	....
57	Oshkosh....W-307	.....	149	204	23600	10200	10.00/20	11.00/20	Her WXLC3	6–4¼x4¾	401	6.3	310	118–2500	7–2⅝x13¾	Y	Fu 5A43	5	Tim 58300	SF	H	** –7.8	Own W307	L41I	560	867	G	TX	82	8¼x3x¾	TF
58	.....W-700	.....	150	204	30000	▲12000	11.00/20	12.00/20S	Her RXCO	6–4⅝x5¼	529	5.4	380	128–2200	7–3x12¾	Y	Fu 5A620	5	Own W700	2F	H	** –6.6	Own W700	L4IH	630	975	G	TX	82	10⅛x3x¾	TF
59	.....W-703	.....	150	204	30000	▲12200	11.00/20	12.00/20S	Her RXLD	6–4¾x5¼	558	5.4	405	141–2200	7–3½x13¾	Y	Fu 5A620	5	Own W700	2F	H	** –6.6	Own W700	L41H	630	975	G	TX	82	10½x3x¾	TF
60	(D).....W-906	.....	158	190	38000	▲14900	12.00/20	14.00/20S	Cum HB600	6–4⅛x6	672	...	500	150–1800	7–4½x16	Y	Fu 4A86	4	Own W906	2F	H	** –6.2	Own W906	LT41WS	630	975	G	TX	90	10½x3x½	TF
61	Peterbilt (D)270DD	8950	165	Opt	27000	12500	10.00/20D	11.00/22	Cum HB600	6–4⅛x6	672	17.	500	150–1800	7–4½x16½	Y	Spi 7741	12	U-200P	2F	R	** –6.42	Tim 36000W	Ws4IA	800	1250	a	FD	80½	10¾x3⅛x⅜	TL

§ Equipped with 3 speed auxiliary transmission. ▲ Includes cab △ 7.50/20 front ■ Auxiliary transmission for logging operation * Rear 8.25/20



"Hey!"

THE MAINTENANCE BOSS EXCLAIMED, "Isn't that HY-POWER lens too small?"

1. "Here's the clearance lamp I use," he said. "It's got a bigger lens than yours!"

"Any of them ever break?" I asked slyly.

"Too darn many," he admitted, "replacements are costing me like crazy!"

"Then switch to this 78 HY-POWER lamp," I shot back. "Its all-around sturdiness, compact 2" lens and flexible strap really cut down breakage!"



2. "Sounds OK," he said, "but I'm from Missouri."

"Prove it yourself then," I said, "hit my lens." He whacked it a good one. "See," I said, "it can really take it! *Now hit yours.*" He did and—crash! "Want some help with the glass," I grinned.

"No," he snorted, "but that doesn't prove how much light your lens gives."



3. "Look!" I said, "you know HY-POWER lamps are famous for greater visibility. Each lens does the job of two ordinary lenses because one part, the concentric rings, bullets the light for long distance lighting. The other part, the radial flutes, directs a good volume of light to the side."

"I did know that," he admitted guiltily. "What's that strap affair?"



4. "That's a flexible strap," I replied. "It permits this lamp to swing out of the way when in contact with anything and then returns it to the normal position. In addition, this 78 lamp has all the other HY-POWER long life features including patented sealer ring, special gasket and—"

"Hold it," he said, "what's that rubber nib on the back?"



5. "That's another exclusive HY-POWER feature," I replied. "It's a combination retainer spring and weather-seal that eliminates spring rust and breakage. It also seals up the back of the lamp, and—"

"Look," he interrupted again, "that's enough! That rugged 2" lens plus those other features are terrific. That lamp I gotta have—and fast!"

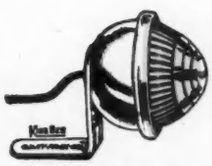


Investigate the Complete Line of* HY-POWER *Truck and Bus Lamps. Ask Your Jobber's Salesman to Show You These Superior Lamps Today!



STYLE No. 78

Clearance and marker lamp with flexible strap and 2" lens. Protrudes very little beyond side of truck. Vibration, dust and moisture-resistant.



STYLE No. 77

Clearance and marker lamp with compact 2" lens. Cup permanently attached to "L" bracket—will not turn. Vibration, dust and moisture-resistant.

FAMOUS KING BEE PRODUCTS

PROTECTO Rubber Rim Truck Mirrors—HY-POWER Truck Lamps

PATENTED PATENTED

Indestructible FOTO-RAY REFLECTORS

PATENTED

Manufactured by AMERICAN AUTOMATIC DEVICES CO.

502 South Throop Street, Chicago 7, Illinois

Line Number	MAKE AND MODEL	Chassis List Price	WHEEL-BASE Minimum Standard	WHEEL-BASE Maximum Standard	Gross Vehicle Weight for Normal Service	Chassis Weight (See definition)	TIRE SIZES D-dual rear S-single rear Standard Front and Rear	TIRE SIZES Maximum Authorized Tire Size (Duals unless noted)	ENGINE DETAILS Make and Model	No. of Cylinders, Bore and Stroke	Displacement	Comp. Ratio	Torque lb. ft.	Max. Brake H.P. at R.P.M. Given	Main Bearings Number, Diameter and Length	Governor Standard	TRANSMISSION Make and Model	Forward Sp'ds	REAR AXLE Make and Model	Gear and Type	Drive & Torque	Gear Ratio Range in High	FRONT AXLE Make and Model	BRAKES SERVICE Make Location Type Operat'n	Lining Area	Drum Area	Drum Material	Hand Location Type	C-A Dimensions (Min. Std. W. B.)	FRAME Side Rail Dimensions	Type
1	Walter (c.f.) FN		126	150	20000	7500	9.00/20D	10.00/20S	Wau MZR	6–4¼x4¾	404	5.6	290	100–2500	7–2⅝x12½	Y	Own FN	6	Own FNB	2	H	6.0–8.0	Own FN	O4IA	470	670	G	FI	84	7x2¾x¼	C
2	(c.f.) FZM		126	150	24000	8500	10.00/20D	12.00/20S	Wau MZR	6–4¼x4¾	404	5.6	290	100–2500	7–2⅝x12½	Y	Own FN	6	Own FMB	2	H	6.0–8.0	Own FJ	O4IA	470	670	G	FI	84	12x3½x2½	B
3	(c.f.) FKM		126	150	24000	9000	10.00/20D	12.00/20S	Wau SRKR	6–4½x5½	517	5.5	365	125–2200	7–3x13¾	Y	Own FJD	6	Own FMB	2	H	6.0–8.0	Own FJ	O4IA	470	670	G	FI	84	12x3½x2½	B
4	(c.f.) FC		126	138	30000	10500	10.00/24D	11.00/24S	Wau SRKR	6–4½x5½	517	5.5	365	125–2200	7–3x13¾	Y	Own FC	6	Own FCB	2	H	7.5–9.0	Own FC	O4IA	585	890	D	FI	84	13x3¾x2½	B
5	(c.f.) FCK		138	162	32000	11000	11.00/24D	12.00/24S	Wau SRKR	6–4½x5½	517	5.5	365	125–2200	7–3x13¾	Y	Own FC	6	Own FCB	2	H	7.5–9.0	Own FCR	O4IA	585	890	D	FI	96	14x3¾x2½	B
6	(c.f.) FCR		126	162	42000	12000	12.00/24D	12.00/24	Wau SRKR	6–4½x5¼	517	5.5	365	125–2200	7–3x13¾	Y	Own FC	6	Own FCR	2	H	7.5–9.0	Own FCR	O4IA	585	890	D	FI	84	14x3¾x2½	B
7	(c.f.) FGB		126	162	32000	12000	11.00/24D	12.00/24S	Wau 145GK	6–5¼x6	779	5.7	580	175–2000	7–3½x17¾	Y	Own FA	6	Own FCB	2	H	7.5–9.0	Own FCR	O4IA	585	890	D	FI	84	14x3¾x2½	B
8	(c.f.) FGR		126	162	42000	13000	12.00/24D	12.00/24	Wau 145GK	6–5¼x6	779	5.7	580	175–2000	7–3½x17¾	Y	Own FA	6	Own FCR	2	H	7.5–9.0	Own FCR	O4IA	585	890	D	FI	89	14x3¾x2½	B
9	Willys-Jeep CJ-2A	*1090	80	80	2937	†1646	6.00/16	7.00/15	Own CJ-2A	4–3⅛x4⅜	134	6.4	105	60–4000	3–2.33x5.48	N	WG T90A	3	Spl 41-2	Hy	H	** –5.38	Spl 25	B4H	118	520	a	F	80	4x1¾x⅛	P

Six-Wheelers

Wheels Driven

10	Autocar ▼																													
11	(D) DC10064.4R		206	206	40000	▲15700	10.00/20	10.00/20	Cum HB600	6–4⅞x6	672	17.	500	150–1800	7–4½x15¾	Y	BL 7741, 703A	12	Tim SW3002W	WF	L	** –6.16	Tim 27454	Ws6IA	1102	1569	N	CD	117⅛	9x3x¼	LTf
12	(D) DC10064S.4R		144	247	60000	▲18400	11.00/24	11.00/24	Cum HB600	6–4⅞x6	672	17.	500	150–1800	7–4½x15¾	Y	BL 7741, 703	12	Tim SD462W	2SF	L	**–10.01	Tim 27454	Ws6IA	998	1519	N	CD	70⅛	10½x3x⅛	LTf
13	Corbitt 35RG		Opt	Opt	35000	.....	10.00/20	10.00/22	Con B6427	6–4⅛x4⅞	427	6.1	332	127–2600	7–2¾x13½	Y	Fu 5A43	5	T SBD1500PA	SF	L	** –6.44	Tim 35000TW	Ws6IA	....	1094	a	TX	Opt	10½x3x¼	Tf
14	40RG		Opt	Opt	40000	.....	10.00/22	11.00/22	Con R6602	6–4½x5⅛	602	6.0	460	185–2600	7–3¼x14½	Y	Fu 5A65	5	T SDD3000PA	2F	L	** –6.84	Tim 35100TW	Ws6IA	....	1567	a	TD	Opt	12¼x3½x⅜	T
15	40SG		Opt	Opt	40000	.....	10.00/20	10.00/22	Con R6513	6–4½x5⅛	513	5.9	400	165–2600	7–3¼x14½	Y	Fu 5A62	10	T SFD154W	2F	L	** –8.43	Tim F2090W	Ws6IA	....	1302	a	TD	Opt	10½x3x¼	Tf
16	50SD6		Opt	Opt	50000	.....	10.00/22	11.00/22	Her HXD	6–5½x6	855	...	645	203–2100	7–3½x17	Y	Fu 4A86	8	T SD353W	2F	L	** –7.33	Tim F3100W	Ws6IA	....	1626	a	TD	Opt	10½x3x¼	Tf
17	Diamond T																													
18	900SD3000PA		204	204	40000	13750	10.00/22D	10.00/22	Her RXLC	6–4⅝x5¼	529	5.4	365	132–2100	7–3½x13¼	Y	Spl 6241, 703	12	T SD3000PA	2F	R	** –7.50	Tim 36020TW	Ws6IA	1082	....	A	TD	134	10⅛x3½x⅛	T
19	(D) 910SW3002PA		206	206	40000	15100	10.00/22D	10.00/22	Cum HB-600	6–4⅞x6	672	17.	500	150–1800	7–4½x16¾	Y	Spl 7851, 703	15	T SW3002PA	2F	R	** –6.07	Tim 36020TW	Ws6IA	1082	....	A	TD	124	10⅛x3½x⅛	T
20	(D) 910SD462W		206	206	50000	16300	11.00/22D	11.00/22	Cum HB600	6–4⅞x6	672	17.	500	150–1800	7–4½x16¾	Y	Spl 7851, 703	15	T SD462W	2F	R	** –8.15	Tim 36020TW	Ws6IA	1014	....	A	TD	124	10½x3½x⅛	T
21	F.W.D. M6x6		243	276	52400	▲21400	11.00/24D	11.00/24	Her HXE	6–5⅛x6	935	5.5	650	198–2000	7–3½x16½	Y	Fu 4B86	8	Wis SD462	2F	H	** –8.15	Wis F409	Ws6IA	1080	1680	a	T6	183	10⅛x3x⅜	P
22	(D) M6x6		276	276	52400	▲21800	11.00/24D	11.00/24	Cum HB600	6–4⅞x6	672	17.	500	150–1800	7–4½x16¼	Y	Fu 4B86	8	Wis SD462	2F	H	** –8.15	Wis F409	Ws6IA	1080	1680	a	T6	216	10⅛x3x⅜	P
23	International (2)																													
24	(b) K-6-F		151	194	22000	6750	7.00/20	8.25/20	Own BLD250	6–3⅛x4½	251	6.3	200	100–3200	4–2¼x5⅜	N	Own F51	5	Own RF1450	SF	H	6.16–6.66	Own F470	LH4IHV	507	848	c	PX	77	8⅛x⅛x⅛	T
25	(b) K-8-F.4R		161	215	27000	8470	7.00/20	9.00/20	Own RED401	6–4⅛x5	401	6.3	318	140–2800	7–3¼x10⅜	Y	Own F52	5	Own RF1560	SF	H	6.50–7.16	Own F550	LH6IHV	705	944	c	PX	84	9¼x3⅛x3½	T
26	(b) K-11-F		161	215	37000	10925	9.00/20	10.00/20	Own RED450	6–4⅝x5	451	6.3	360	148–2600	7–3¼x10⅜	Y	Own F54	5	Own RF1670	SF	H	** –7.16	Own F760	TW6IA	966	....	G	PX	84	10½x3⅛x3½	T
27	Ken- (D) 523.4R		193	241	43000	14600	10.00/20	11.00/22	Cum NHB6	6–5½x6	743	17.	565	200–2100	7–4½x16½	Y	BL 7841	4	Ti SW3012PA	WF	R	** –6.16	Tim 36000	Ws4rIA	924	1248	a	TD	102	9¼x3¼x2⅛	C
28	worth (D) 524.4R		193	241	54000	15400	10.00/20	11.00/22	Cum NHB6	6–5½x6	743	17.	565	200–2100	7–4½x16½	Y	BL 7841	4	Tim SW452	WF	R	6.0 –7.6	Tim 36000	Ws4rIA	800	1192	a	TD	102	9½x3¼x2⅛	C
29	528.4R		186	234	40000	12500	10.00/20	10.00/22	Bud L0525	6–4½x5½	525	5.5	385	135–2200	7–3x11½	Y	Fu 5A620	5	Ti SW3012PA	WF	R	** –6.16	Tim 35100	Ws4rIA	924	1248	a	TD	102	9¼x3¼x2⅛	C
30	532.4R		186	234	35000	12500	10.00/20	10.00/22	Wau 6MZR	6–4¼x4¾	404	5.9	300	112–2500	7–2⅝x12½	Y	Fu 5A430	5	Ti SW3012PA	WF	R	** –6.16	Tim 35100	Ws4rIA	924	1248	a	TD	102	9½x3¼x2⅛	C
31	(D) 548.4R		193	241	54000	17000	11.00/22	12.00/24	Cum NHB6	6–5½x6	743	17.	565	200–2100	7–4½x16½	Y	BL 7841	4	Tim SD462	DR	R	** –8.15	Tim 36000	Ws4rIA	800	1192	a	TD	109	9¼x3¼x2⅛	dbC
32	(D) 552.4R		255	255	54000	20700	13.00/24	13.00/24	Cum HB6	6–4⅞x6	672	17.	500	150–1800	7–4½x16½	Y	BL 7841	4	Tim SD462W	WF	R	** –8.15	Tim 36000	Ws4rIA	800	1192	a	TD	168	9½x3¼x2⅛	dbC
33	Marmon-Herr.																													
34	(C) CMM5T-6	2790	156	....	225000	6673	7.50/20D	7.50/20	Ford	8–3⅛x3¾	239	6.4	176	100–3500	3–2½x4.71	N	Ford	..	Thornton	S	H	** –6.67	Own M5	M	503	....	a	F	82⅛	7½x3x¼	C
35	(C) CMM6T-6	2822	180	....	225000	6710	7.50/20D	7.50/20	Ford	8–3⅛x3¾	239	6.4	176	100–3500	3–2½x4.71	N	Ford	..	Thornton	S	H	** –6.67	Own M5	M	503	....	a	F	106¼	7½x3x¼	C
36	MH-555-6		260	260	37000	14900	11.00/20	11.00/20	Her RXC	6–4⅝x5½	529	6.3	390	131–2200	7–3x9½	Y	Fu 5A620	5	Tim SD353	2B	H	** –8.15	Tim F3100W	Ws..A	1092	1608	...	F	84	10⅛x3x⅛	T
37	Peterbilt (D) 344DT	11415	189	Opt	43000	16250	10.00/20D	11.00/22	Cum HB600	6–4¼x6	672	17.	500	150–1800	7–4½x16½	Y	Spl 7741	12	Tim SW3012W	WF	A	6.00– 8.5	T 36000W	Ws6IA	1212	1734	a	FD	106½	10⅝x3½x⅛	TL
38	(D) 345DT	11870	187	Opt	43000	17300	10.00/20D	11.00/22	Cum HB600	6–4⅞x6	672	17.	500	150–1800	7–4½x16½	Y	Spl 7741	12	Tim SW452W	WF	A	6.00–10.2	T 36000W	Ws6IA	1000	1626	a	FD	106½	10⅝x3½x⅛	TL
39	(D) 354DT	11915	187	Opt	56000	17450	10.00/20D	11.00/22	Cum HB600	6–4⅞x6	672	17.	500	150–1800	7–4½x16½	Y	Spl 7741	12	Tim SW452W	WF	A	6.00–10.2	T 27454W	Ws6IA	1000	1626	a	FD	106½	10⅝x3½x⅛	TL
40	(D) 355DT	12575	187	Opt	56000	17900	10.00/20D	11.00/22	Cum HB600	6–4⅞x6	672	17.	500	150–1800	7–4½x16½	Y	Spl 7741	12	Tim SD462W	2F	A	** –8.15	T 27454W	Ws6IA	1000	1626	a	FD	106½	10⅝x3½x⅛	TL
41	Sterling																													
42	(D) HWS160H		185	245	42000	14500	10.00/20D	10.00/22	Cum HB600	6–4⅞x6	672	17.	500	150–1800	7–4½x16½	Y	Spl 7741§	12	T SW3002PA	WF	L	** –6.16	T 26450W	Ws6IA	1160	1878	a	TX	97	9x3¼x1¼	A
43	(D) RWS160H		219	232	42000	14500	10.00/20D	10.00/22	Cum HB600	6–4⅞x6	672	17.	500	150–1800	7–4½x16½	Y	Spl 7741§	12	T SW3002PA	WF	L	** –6.16	T 26450W	Ws6IA	1160	1878	a	TX	131	9x3¼x1¼	A
44	(D) HDS160H		197	232	42000	15000	10.00/20D	10.00/22	Cum HB600	6–4⅞x6	672	17.	500	150–1800	7–4½x16½	Y	Spl 7741§	12	T SD353W	2F	L	** –7.33	T 26450W	Ws6IA	1092	1818	a	TX	109	9x3¼x1¼	A
45	(D) HWS160HS		211	232	42000	15100	10.00/20D	11.00/22	Cum HB600	6–4⅞x6	672	17.	500	150–1800	7–4½x16½	Y	Spl 7741§	12	T SW452W	WF	L	** –6.00	T 26450W	Ws6IA	1092	1818	a	TX	123	9x3¼x1¼	A
46	HCS195		191	207	48000	14000	10.00/20D	11.00/22	Wau 140GK	6–4½x5½	525	6.1	403	137–2250	7–3x16½	Y	Fu 5A62§	15	Own 195W	CD	R	** –7.31	T 26450W	Ws6IA	1160	1978	a	TX	105	9¼x3⅝x3⅜	A
47	(D) HCS195H		197	211	48000	15000	10.00/20D	11.00/22	Cum HB600	6–4⅞x6	672	17.	500	150–1800	7–4½x16½	Y	Spl 7741§	12	Own 195W	CD	R	** –7.31	T 26450W	Ws6IA	1160	1978	a	TX	109	9¼x3⅝x3⅜	A
48	(D) HWS235H		195	211	52000	15500	11.00/20D	11.00/22	Cum HB600	6–4⅞x6	672	17.	500	150–1800	7–4½x16½	Y	Spl 7741§	12	T SW452W	WF	L	** –6.80	T 27454W	Ws6IA	1092	1810	a	TX	107	9¼x3⅝x3⅜	A
49	(D) HCS265H		178	195	60000	18500	11.00/24D	12.00/24	Cum HB600	6–4⅞x6	672	17.	500	150–1800	7–4½x16½	Y	Fu 4B86§	12	Own 265W	CD	R	10.76–15.0	T 27454W	Ws6IA	1160	2010	a	TX	90	9¼x3⅝x3⅜	A
50	(D) HCS297H		178	195	70000	20500	12.00/24D	13.00/24	Cum HB600	6–4⅞x6	672	17.	500	150–1800	7–4½x16½	Y	Fu 4B86§	12	Own 330W	CD	R	10.76–15.0	T 27454W	Ws6IA	1280	2046	a	TX	90	9¼x3⅝x3⅜	A
51	Truckstell																													
52	(C) F2X26.2F		156	237	26000	▲5900	7.50/20	8.25/20	Ford	8–3⅛x3¾	239	6.4	176	100–3800	—2¼x5¼	N	Ford	4	Ford	SF	..	** –6.67	Ford	F6IHV	502	836	c	TX	82½	7½x3x.47	CTf
53	(C) F2X27.2F		156	237	28000	▲6450	7.50/20	8.25/20	Ford	8–3⅛x3¾	239	6.4	176	100–3800	—2¼x5¼	N	Ford	8	Eat 1350	SFd	..	5.83–8.11	Ford	F6IHV	502	836	c	TX	82½	7½x3x.47	CTf
54	(C) F2X34.2F		156	237	34000	▲8235	8.25/20	10.00/20	Ford	8–3⅛x3¾	239	6.4	176	100–3800	—2¼x5¼	N	F and BL	12	Cla R1300	SF	..	5.12–6.83	Ford	F6IHV	605	1043	a	TX	82½	7½x3x.47	CTf
55	(C) F4X26.4R		144	210	26000	▲6300	7.50/20	8.25/20	Ford	8–3⅛x3¾	239	6.4	176	100–3800	—2¼x5¼	N	Ford	8	Ford	SF	..	6.07–10.5	Ford	F6IHV	502	836	c	TX	63⅛	7½x3x.47	CTf
56	(C) F4X29.4R		144	210	29000	▲7000	7.50/20	8.25/20	Ford	8–3⅛x3¾	239	6.4	176	100–3800	—2¼x5¼	N	Ford	16	Eat 1350	SFd	..	7.47–12.9	Ford	F6IHV	502	836	c	TX	63⅛	7½x3x.47	CTf
57	(C) C2X26.2F		157	234	26000	▲5800	7.50/20	8.25/20	Chevrolet	6–3⅛x3¾	235	6.6	192	93–3100	4–2¾x5⅛	N	Chevrolet	4	Chevrolet	SF	..	** –6.17	Chevrolet	C6IHV	546	780	a	2I	82¼	7½x3x.47	CTf
58	(C) C2X28.2F		157	234	28000	▲6500	7.50/20	8.25/20	Chevrolet	6–3⅛x3¾	235	6.6	192	93–3100	4–2¾x5⅛	N	Chevrolet	8	Tim	SFd	..	5.64–8.22	Chevrolet	C6IHV	546	780	a	2I	82¼	7½x3x.47	CTf
59	(C) C2X34.2F		157	234	34000	▲8285	8.25/20	10.00/20	Chevrolet	6–3⅛x3¾	235	6.6	192	93–3100	4–2¾x5⅛	N	C and BL	12	Cla R1300	SF	..	5.12–6.83	Chevrolet	C6IHV	615	1043	a	TD	82¼	7½x3x.47	CTf
60	(C) C4X26.4R		145	212	26000	▲6120	7.50/20	7.50/20	Chevrolet	6–3⅛x3¾	235	6.6	192	93–3100	4–2¾x5⅛	N	Chevrolet	8	Chevrolet	SF	..	6.41–11.1	Chevrolet	C6IHV	546	780	a	2I	63⅜	7½x3x.47	CTf
61	(C) C4X29.4R		145	212	29000	▲6880	7.50/20	8.25/20	Chevrolet	6–3⅛x3⅛	235	6.6	192	93–3100	4–2¾x5⅛	N	Chevrolet	16	Eat 1350	SFd	..	7.47–12.9	Chevrolet	C6IHV	512	836	a	TD	63	7½x3x.47	CTf

§ Equipped with 3 speed auxiliary transmission. ▲ Includes cab. † With Power Take-off. * Vehicle Price.


"IT'S A SNAP-ON ... THAT'S ALL YOU NEED TO KNOW"
Snap-on
Socket Wrenches
". . . take a look, Mac — it's funny how you never lose the kick a good tool gives. When I was still a cub I got smart to what every old-timer knows . . . the heap of difference that fine tools make. You know — the fun of working with them, and the extra dollars they put in the old pay envelope. Snap-ons taught me that, and Snap-ons keep right on proving it, year after year. And I've saved a lot of time and trouble buying tools the Snap-on way. That's why the Snap-on man is welcome in every shop... he saves our time, keeps our kits in shape ...and gives us a chance 'to see and try before we buy.'"
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Snap-on Tools
THE CHOICE OF BETTER MECHANICS

SELECTING SAFE DRIVERS

(CONTINUED FROM PAGE 54)

previous experience with transportation personnel, gained during two years as head of Personnel Research for the Los Angeles Transit Lines, I was called in to assist with the study.

Up to this time, intensive research had shown me that in back of every accident which had ever happened in a bus system there was an operator who either contributed to the seriousness of the accident or minimized its gravity by his ability, if he did not himself either cause it or prevent it. These facts were easy to establish on the basis of available records; but so far they had been of no particular value to anybody, because they were history—the story of how individual operators performed *after* they had been on the job. By then there was no retracting the damage already done. The solution to the problem therefore lay in determining accident-proneness ***before*** **hiring.**

Rather than study the elements of the bus driver's job, we decided to conduct an intensive examination of the characteristics of safe drivers themselves, and to obtain, if possible, a contrast to the characteristics of unsafe or dangerous bus drivers. If a clear definition of differences could be obtained, it would be possible, when selecting applicants for driving, to match the applicants against the safe drivers and pick only those men who measure up to the standards.

The method which produced such fruitful results is outlined below.

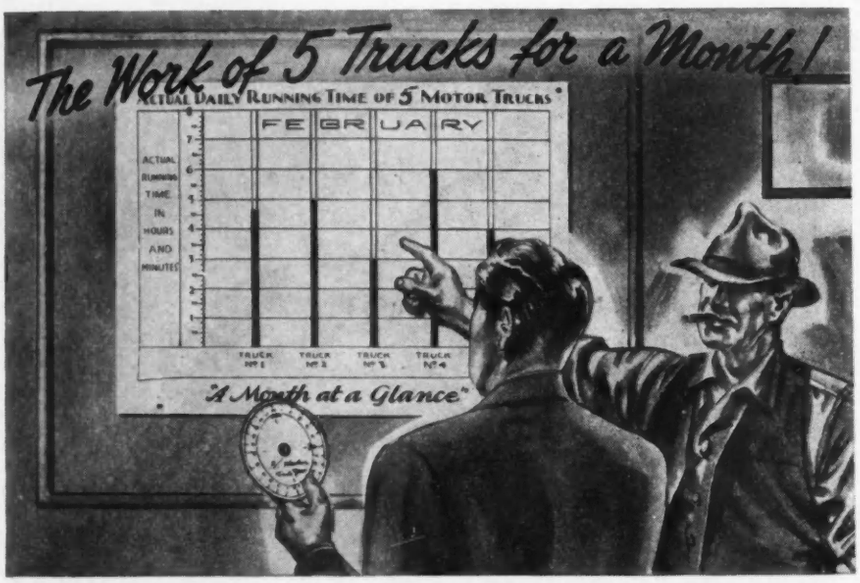
Securing the active cooperation of the managements and unions of the Los Angeles Transit Lines, the L.A. Motor Coach Lines, the L.A. Board of Education Transportation Dep't., and the Lang Motor Bus Co., of Long Beach, Calif., Clark launched the survey. Using the Job Qualification Inventory, a scientifically developed personnel tool which investigates six aspects of an individual's fitness in 35 broad occupational classifications, Clark's Committee examined the responses of 420 bus drivers. About 25 per cent of these, or 132 men, were known from company records to be safe operators, averaging only .75 accidents per year per man. The responses of these men became the criterion on the basis of which standards for establishing the qualifications of a safe bus driver were compiled.

Profile of Safe Driver

SAFE drivers, it was found, tended to be as like as peas in a pod, in so far as their responses to the Inventory were concerned. When the composite profile of qualifications was established (see Fig. 1) the dominant features were in every case identical. When there were slight differences in occupational areas not pertinent to bus operation, they were at such a low level as to be insignificant.

The picture was entirely different when it came to the accident-prone drivers. Either a lower level of response in the same occupational fields in which the good driver was high, or a higher level of response in the remaining fields in which the safe

(TURN TO PAGE 118 PLEASE)

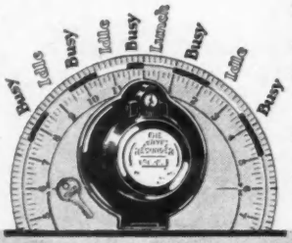


RUNNING TIME IS THE "PAY-OFF"

And the Servis Recorder SKY-LINE Wall Chart Compares the Working Record of Each Truck

● How much of the day is each truck *actually running?* The answer to that is the real key to efficient truck management. Suppose you are operating five trucks, for instance, and you always thought Joe on No. 5 and Emil on No. 2 were equally hard working drivers, wouldn't it startle you to find that No. 5 was running *3 hours* less per day than No. 2!

Well, just make a graphic picture of their comparative running time for a month, obtained from the charts produced by the *Servis Recorder.* That Wall Chart compares the work of the whole fleet at a glance. Then you'll know where to correct abuses such as idleness, avoidable delays, faulty routing, unnecessary overtime, speeding, etc. Write for our SKY-LINE Chart and full information. THE SERVICE RECORDER CO., 1375 Euclid Avenue, Cleveland 15, Ohio.



The Servis Recorder

Tells Every Move Your Truck Makes



YOU DON'T HAVE TO

RE-DESIGN

THE VEHICLE TO APPLY VICKERS Hydraulic Power Steering

Vickers Hydraulic Power Steering requires minimum space and can be located where it does not interfere with other apparatus. In nearly all cases it is easily applied to existing vehicle design with only a few simple alterations.

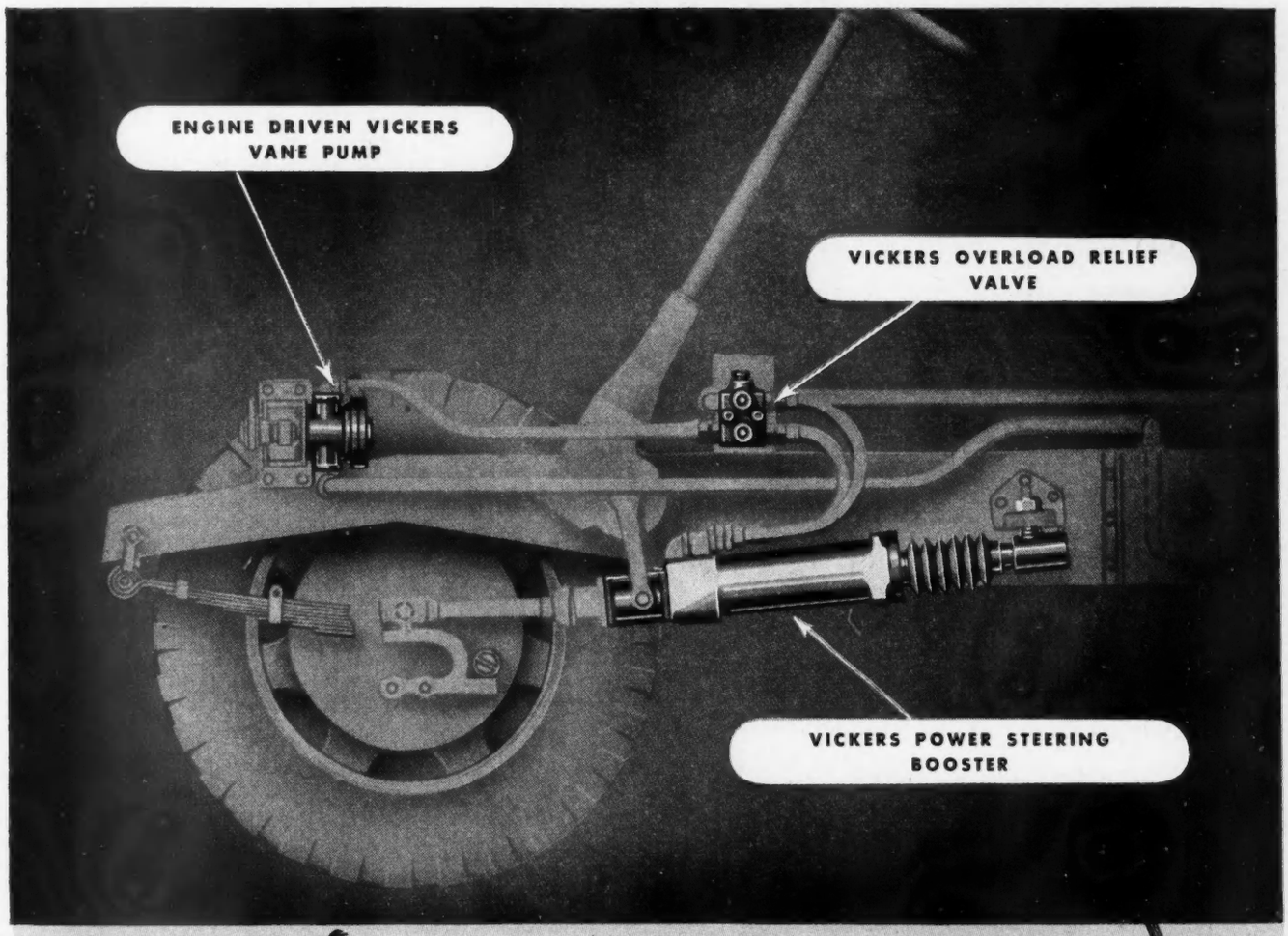
The hydraulic power cylinder is connected to the drag link at one end and the chassis frame at the other; it is controlled by the pitman arm. The existing steering gear is not altered. Hence, Vickers Power Hydraulic Steering is easily applied either as original or as optional equipment.

Steering is finger-tip easy—instantly responsive—and no road shocks can get to the steering wheel. Overload protection and lubrication are both automatic. Fifteen years of successful operation on trucks, buses, and road machines have proved the value of Vickers Power Hydraulic Steering. Write for Bulletin 44-30.

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REPRESENTATIVE APPLICATIONS OF VICKERS HYDRAULIC POWER STEERING

SELECTING SAFE DRIVERS

(CONTINUED FROM PAGE 116)

operator was low, made the accident rate shoot up.

"This was very interesting to observe," says Clark. "Let a man be the same as one of our safe drivers in every respect except, say, 'Tools.' If he did not come up to the fourth degree on the Inventory on 'Tools', or if his score was higher than the fourth degree, his accident rate was always higher than that of a safe driver. Or a man could be identical in every respect to a safe driver, except that he might show high in 'Speech.' He, too, would have a higher accident rate."

The higher the accident frequency, the Committee found, the more distorted and unlike the profile of the safe operators was the profile of the accident-prone.

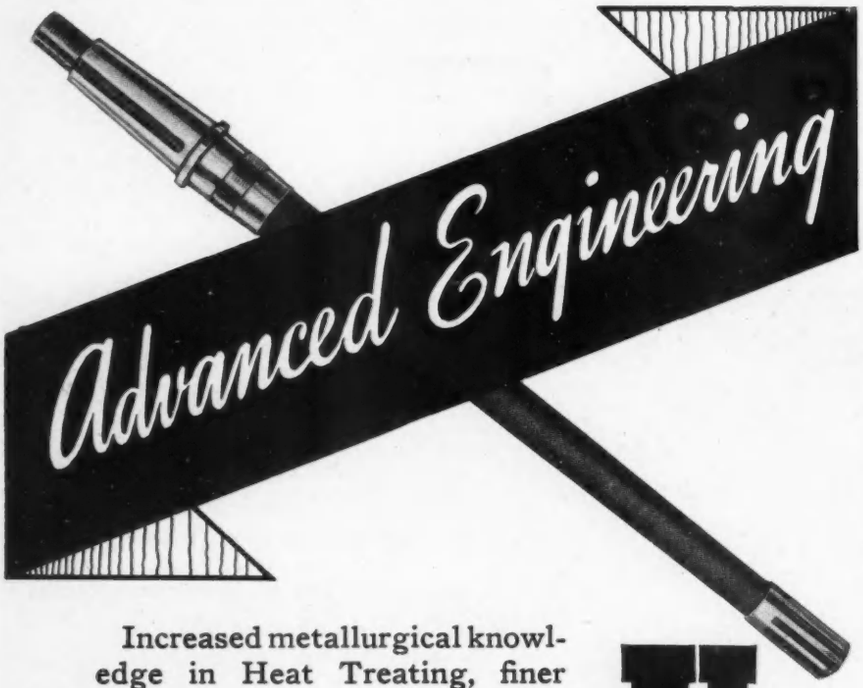
Experience and education, it was also found, were of practically no critical importance. Safe and dangerous operators were alike when the chips were finally down, popular impression notwithstanding. But age, marital status, and home ownership revealed interesting differences. Most safe operators (80 per cent) were between 26 and 45; they were divorced only third as often as the unsafe drivers; and half of them owned their own homes, as against only 14 per cent of the accident-prone. And, most revealing of all, the men identified by the Job Qualification Inventory as safe drivers had a labor turnover of only one-sixth that of the unsafe drivers.

This study should mean a great deal to the entire transportation industry. Suppose the groundwork which has been accomplished here in Los Angeles in terms of the bus transportation industry, after adjustment for differing conditions in other phases of transportation, reduces the hiring of unqualified drivers by only, speaking conservatively, a few per cent. In training costs alone, the saving would be tremendous when you consider that to train a bus driver involves an expenditure of over $400. What the effect on reducing labor turnover and claims paid would be is staggering to conjecture.

In the next six months, the National Institute of Vocational Research intends to determine the actual degree of savings possible through the elimination of hiring unqualified bus drivers. The standards developed for bus drivers are also being adjusted for application to other industries concerned with the mass employment of operators of automotive equipment.

END

(Please resume your reading on P. 55)



Increased metallurgical knowledge in Heat Treating, finer materials, improved techniques —that's what we mean by Advanced Engineering. For you, Advanced Engineering means U. S. Axles that are tougher and better than ever before. Since 1920 we have been making pioneering progress in the automotive and allied fields. We're still at it.

If you don't have a copy of our Silver Anniversary Catalog, send for your complimentary copy today.

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THE U. S. AXLE COMPANY, INC.
POTTSTOWN, PA., U. S. A.



This trailer equipped with an Elevating Endgate uses "engine-power" instead of "brawn-power" to lift and lower its heavy loads of packaged fuel. The combination hydraulic Elevator and Steel Endgate is furnished by the Fruehauf Trailer Co. for installation on either trucks or trailers. Smooth hydraulic power lifts or lowers any load up to 1 ton

Porous Chrome*
PISTON RINGS

an exclusive American Hammered development

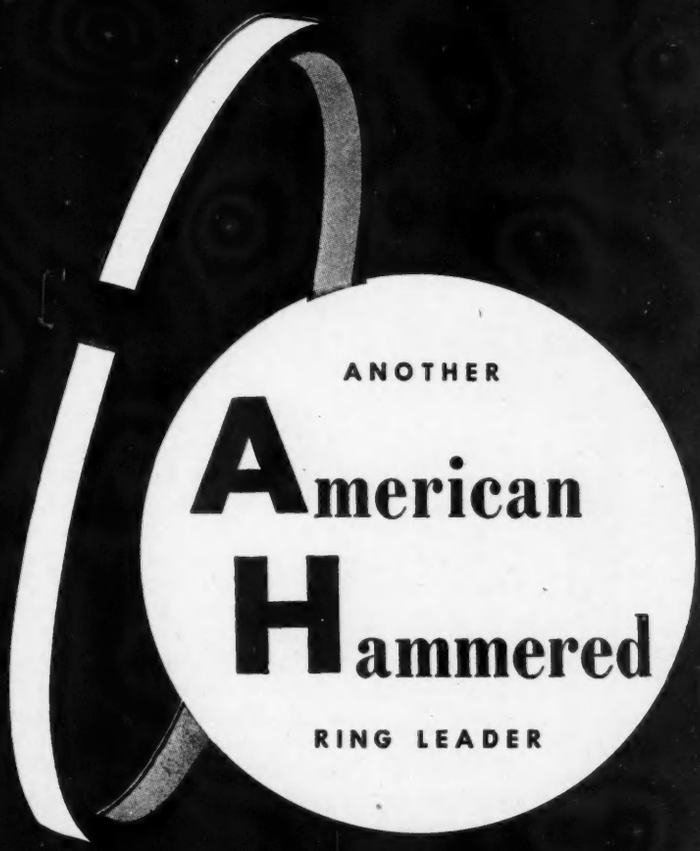
American Hammered developed the application of porous chrome to piston rings and set a new standard for engine performance. Road tests covering more than seven million miles—in all types of bus and truck engines, in all types of service—established these facts: American Hammered Chrome piston rings . . .

Quadrupled the time between engine overhauls

Kept oil consumption lower for a longer period

Reduced cylinder wear as much as one-third of what is considered normal

FOR THE FLEET OPERATOR, this adds up to big savings in operating and maintenance costs, and the elimination of much of the down-time that cuts into your profits. *Your American Hammered jobber is prepared to serve you with Porous Chrome Piston Ring Sets.*



* Van der Horst process . . . first applied to piston rings by American Hammered.

Koppers Company, Inc., American Hammered Piston Ring Division, Baltimore, Maryland

American Hammered Piston Rings

A KOPPERS PRODUCT

CCJ NEWSCAST

(CONTINUED FROM PAGE 102)

Truckstell Changes

The Truckstell Co. of Cleveland, Ohio, announces an expansion in personnel. Howard H. Lynch, formerly Eastern Division manager, has been promoted to sales manager. W. F. Balzerick will continue as Western Division manager.

New appointments are: Charles L. Brower, Eastern Division manager; Loren W. Creed, Central Division manager, and Gilbert K. Smith, Southern Division manager.

Timken-Detroit Axle Co. Announces Sales Appointments

The Timken-Detroit Axle Co. has announced an enlargement and realignment of its sales staff with the following personnel changes: Neil S. Lincoln has been named sales manager of the Automotive Divison; C. C. Bartell has been made sales manager of the Special Equipment Division; H. C. Maddux becomes sales manager of the Trailer Division; E. F. Petsch and R. V. Hessler have been appointed assistant sales managers of the Eastern and Western Divisions, respectively, and J. H. Balog has been named manager of the sales office, while B. B. Lewis becomes manager of the sales order department.



A. F. Stevens, newly appointed sales promotion manager of the Automotive Division of the Van Norman Co., Springfield, Mass.



Wm. Curran & Sons, who operate the Metropolitan Coal Co. in Chicago, use this Fruehauf dump trailer to deliver coal up narrow alleys and into places where an ordinary truck could not maneuver. The trailer carries a 12-ton load and is used primarily for deliveries to hotels and apartment buildings. Hinged-in-the-middle, the entire vehicle makes a complete turn in the same radius as the short-wheelbase tractor



Specially designed sugar cane bodies equipped with Heil telescopic hoists rate "tops" on the Government's urgency list because of the critical nature of the current sugar situation. Kenworth Motor Truck Co., Seattle, who specializes in trucks for the sugar cane field, has specified hydraulic hoists produced by The Heil Co., Milwaukee, on these new, all-steel, 3-axle-drive units because of their ability to take the punishing, high speed operation required when the cane is harvested. Forty of these special trucks are on the job in the Hawaiian Islands



You maintain 'round the clock refrigeration in your trucks with Kold-Hold Streamlined "Hold-Over" Plates. You are sure of uniform, controlled refrigeration during the day's run.

In addition, the "Hold-Over" Plates protect your undelivered load — you leave it overnight in the truck — find it next morning as fresh, attractive, as it would be in your own cooler room.

Kold-Hold Refrigeration is simple, compact and efficient. Occupying less space inside the truck, it permits greater pay loads and longer runs.

Kold-Hold Engineers can give you modern refrigeration for your old trucks, or provide better refrigeration for your new ones. Ask them for their suggestions.

KOLD-HOLD MANUFACTURING CO.
620 N. GRAND AVE.
LANSING 4, MICHIGAN

DRIVER EDUCATION

(CONTINUED FROM PAGE 52)

formation to highway patrolmen or bystanders so aid could be summoned more quickly.

Since we are continually adding new drivers, this feature becomes more important. New employees have so much on their mind that they are apt to forget all they have been told during the first few days of their employment.

Road Trouble Suggestions

SUGGESTIONS will be furnished to drivers encountering mechanical difficulties while on the route. The following data are incomplete but will give a general idea of the type of useful information that will be supplied to every driver:

1. *When starter locks*

a. Never push car or truck forward. It will only lock tighter.

b. Always put transmission in high gear and push backwards.

c. If no success call garage.

d. Don't start engine while in gear. It will lock starter.

2. *When motor heats*

a. Never put COLD water in a HOT engine. It will crack head or cylinder block.

b. Let engine cool first—below 180 deg. If not equipped with heat indicator, let cool below boiling point.

c. Always let engine run slowly while adding water, after it has been overheated.

d. Report to garage any excessive overheating of engine, so cause can be determined. Watch heat indicator always.

3. *Battery care and precautions*

a. Don't try to operate vehicle with low battery. Have garage change it.

b. If engine doesn't start after a few tries, don't run battery down by continued use of starter. Call garage for service.

c. Never burn lights while starting engine. It will cause an extra drain on battery, amperage and voltage.

d. Always turn off dome light when not in use.

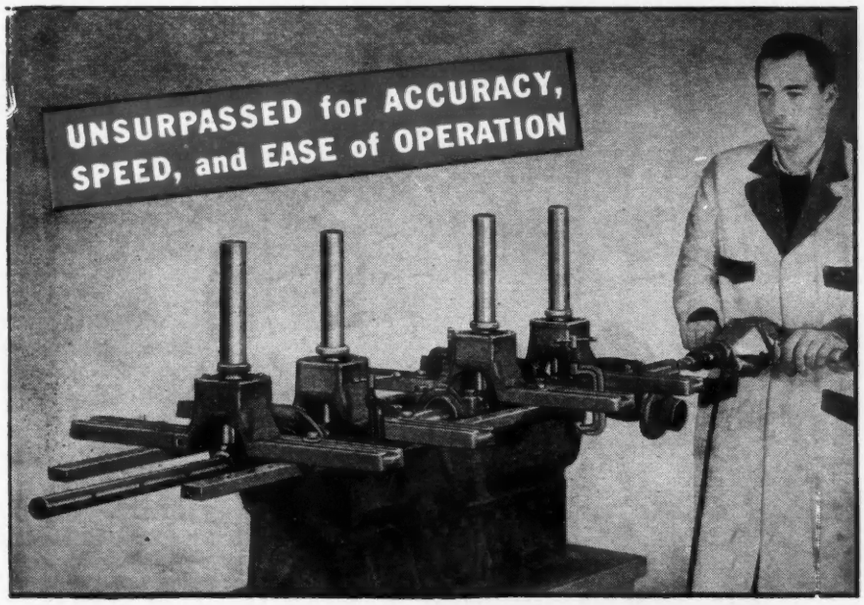
e. Always turn off ignition key when leaving truck.

f. Watch ammeter. Report if proper charging rate is not indicated.

(TURN TO NEXT PAGE, PLEASE)



Answer on Page 124



AMMCO

Model "L42" Universal

LINE BORING MACHINE

for Main and Camshaft Bearings

- Takes care of all cars and trucks.
- Sets up in less than 10 minutes.
- Needs no centering rings.
- Accurately bores bearings 1⅜" to 4" dia.
- Power driven or hand operated.
- AVAILABLE . . . Ask for new catalog page.

Over our factory flies the ARMY-NAVY "E"—awarded for excellence in the production of machinery and tools vitally needed to win the war.

AUTOMOTIVE MAINTENANCE MACHINERY CO.
2100 Commonwealth Avenue • North Chicago, Illinois

DRIVER EDUCATION

(CONTINUED FROM PAGE 123)

g. Intermittent use of starting motor, with a brief pause between attempts, will frequently result in starting a cold engine. Continued operation of starting motor will only result in exhausting the battery to no useful purpose. Brief periods of rest allow the battery to recuperate.

h. A run-down battery may freeze in cold weather.

4. *Starting engine*

a. Always keep clutch pedal pressed down while starting engine. This allows the starter to crank the engine without having to turn the transmission gears and results in quicker and more positive starting in cold weather.

b. Use choke as little as possible. Too much choking causes dilution of oil in the crankcase, thereby causing excessive engine wear. Too much choking also will cause engine to flood, thereby creating a mixture in the cylinders which will not explode. If motor becomes flooded, open throttle to full position, turn engine over a few times with switch off.

c. Never race engine after it first starts or during warm-up period. It will increase the wear on pistons, rings and cylinders and all moving parts if you speed up the engine before the oil has had a chance to circulate completely. If you can't wait for engine to warm-up, take it easy for the first few minutes of driving.

d. Always keep your foot off the clutch until you are ready to use it.

e. Watch oil pressure gage. Stop engine if it doesn't register within 30 seconds after starting engine or if it stops at any other time.

f. Never drive vehicle at high speeds in low gear—it causes unnecessary wear of engine.

g. To start on ice never use low gear. Start in second or high, engaging clutch slowly. This will allow the wheels to grip the ice better because the wheels will have less tendency to spin. And so on.

We aim to cover every situation that the driver may encounter under all possible conditions. Of course, good drivers should be familiar with most of the points covered. They may be—they also may forget. We will not leave that to chance.

END

(Please resume your reading on P. 53)



Differentials, transmissions and steering gears suffer costly abuse in winter weather when lubricants congeal. MARVEL Mystery Oil added to all gearing keeps greases fluid and maintains a protective film coating even in severest cold. That's because MARVEL Mystery Oil by itself pours freely at 70° below zero—100° below freezing!

Added to crankcase oil, MARVEL Mystery Oil promises instant starting and smoothest running for even subzero motors. What's more, this sensational reinforcing additive toughens film coatings to hang on at extreme high temperatures — vital lubrication of oft-neglected upper cylinder parts is assured. Added to gasoline, the solvent action of MARVEL Mystery Oil goes to work on gums and carbon deposits, and frees sticky valves!

Why not reduce winter wear and worry right now — ask your Jobber about MARVEL Mystery Oil for —

Crankcase . . . . . To provide instant starting and smooth out engine performance.
Gas Tank . . . . . To keep fuel system clean — gum and corrosion free.
Differential . . . . To eliminate clash and strain.
Transmission . . . To ease shifting.
Steering . . . . . To loosen stiffness.

EMEROL MANUFACTURING CO., Inc., 242 W. 60th St., New York 23, N.Y.



MARVEL
MYSTERY OIL



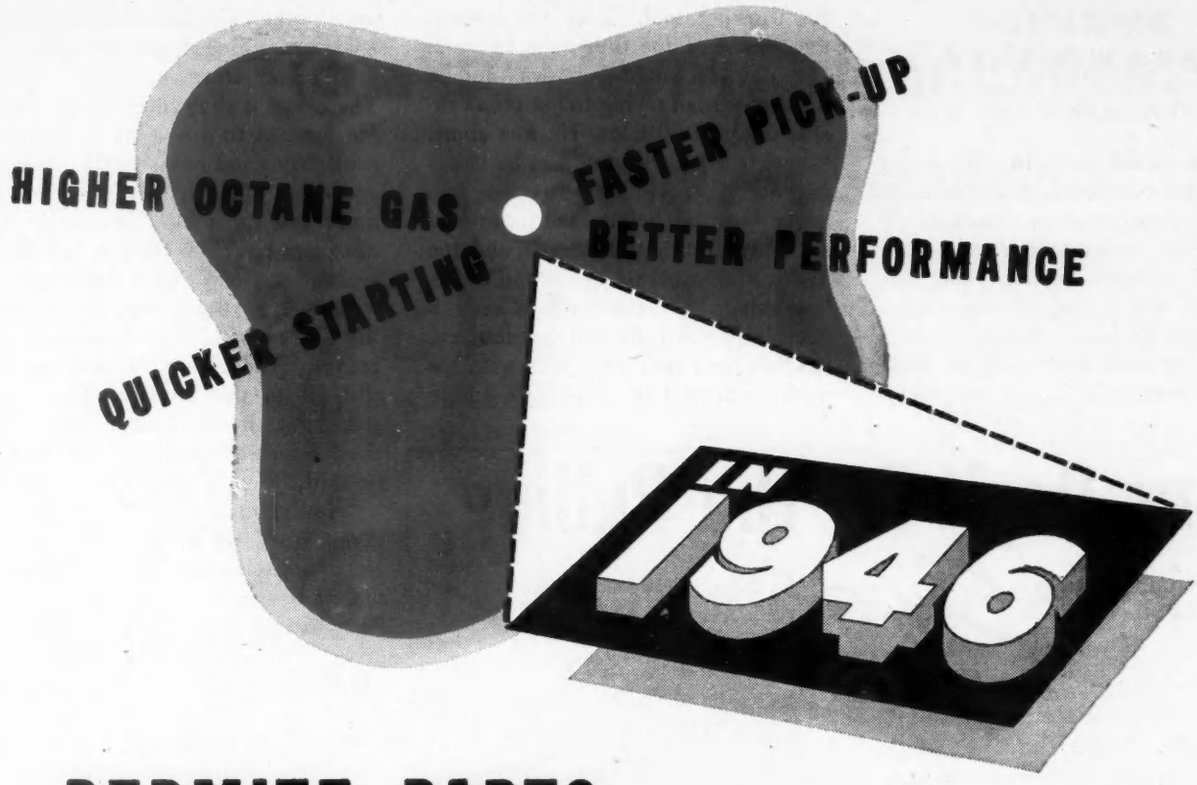
George E. Victor has resumed his former position as executive vice president in charge of production at the Victor Mfg. and Gasket Co., Chicago

● WHERE'S HOMER?

ANSWER

(To Question on P. 123)

Homer would be on Manhattan Island. According to a survey made by R. L. Polk & Co., there are more Mack trucks registered in New York County, which is Manhattan Island, than any other make of truck.



PERMITE PARTS . . .

Engineered to meet Today's *Tougher* Operating Conditions

The replacement parts you use to keep your car and truck fleets rolling will be put to a greater test than ever in 1946.

Heavier traffic, higher octane gas, resumption of the greater peacetime speeds, competition against other forms of transportation – all mean that the parts installed by your service men **must be good,** to hold down maintenance costs and prevent loss of operating mileage.

Long recognized for their dependability, Permite Pistons, Valves and other Permite Replacement Parts are adding to their laurels in today's strenuous service. Wartime engineering advancements are reflected in the Permite Parts that are now giving new life and operating economy to the trucks, buses and cars on today's busy highways. Use Permite Parts for their accurate fit, their easy installation, for their long service. Use them and compare your maintenance costs.

ALUMINUM INDUSTRIES, Inc.
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REPLACEMENT PARTS

PISTONS	VALVE GUIDES	BOLT SETS	WATER PUMPS	MUFFLERS AND	CYLINDER SLEEVES
PISTON PINS	VALVE STEM KEYS	TIE-ROD ENDS	WATER PUMP	CLAMPS	WET SLEEVE
VALVES	VALVE SPRINGS	BUSHINGS	REPAIR KITS	TAIL PIPES	ASSEMBLIES

THERE IS A PERMITE JOBBER NEAR YOU

MECHANICS AS I KNOW THEM

(CONTINUED FROM PAGE 51)

axle that would jump in and out of gear at his command. Of course, he never let them put more than $10,000 on it. They were great friends—like the two famous Scotch pals, you know. It was a case of Hugh Fitzmorris and Morris Fitzhugh.

"Yes, sir, this early English used by truck mechanics is a pretty powerful working tool. Take the strange experience of Joe Blow, our tireman. One day last summer he was out on a country road trying to get off an inside dual, 11.00 x 20. He was alone. The driver was helping him by sleeping in his cab. Now this tire had never been off before, the paint had hardened on the stud threads, and Joe had just about reached the end of his vocabulary. Of course, he's only a tireman with a limited vocabulary, but he's been very successful with his work. But this tire wouldn't budge even though Joe had good hot verbal sparks snapping across the studs.

"A car drove up and stopped. There was a clergyman at the wheel. He listened to Joe a while and then said, 'My good man, you'll never get anywhere with that language. Why don't you try a little prayer on that obstinate tire?' Well, Joe had about reached the end of his endurance as well as his vocabulary, so he said, 'By G - - , I will.' And he said a short prayer. And lo and behold, the tire slid off to the ground. They both stared at it in amazement. The clergyman was the first to speak. And he said, 'Well, I'll be G - - Damned!'

"Now there's another peculiarity about truck mechanics. They never work on their own cars. Just look at those outside. No, they're not wrecks. They belong to the mechanics. I'll give you an example of how they handle such things. A mechanic's wife drove up in his car the other day, bounced out indignantly, and said: 'This damn thing stops if you look at it.' And what do you suppose he said? 'Well, don't look at it.' And recently another mechanic's wife got out of his car, and when she stepped out on the running board, it sank to the ground. What did he say? 'That's what you get for having a fat wife.' "

Reporter: "Well, that's funny, because whenever I've seen mechanics out with their wives, they seem to be listening to her with one ear and to engines of passing cars with the other. They're always telling people there's a skip in their engines, or the valves need adjusting, or there's a rod loose."

O'Leum: "Oh, that's different. I told you your mechanic is a true artist. He goes through life listening to things running round. Clancy over there claims he can hear his brain working sometimes—but nobody can believe that. But fixing engines is something else. Mechanics love to stand around listening to an engine running. I hear the company is thinking of equipping our men with ear horns though, because five of them listened to an engine the other day and then took the oil pan and head off looking for a noise which was later found to be a loose muffler."

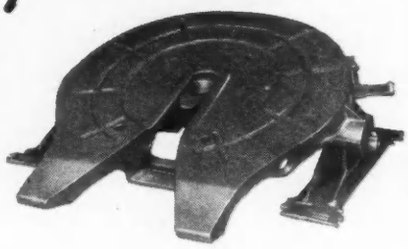
Reporter: "Tell me, Mr. O'Leum. Don't mechanics raise families? How come they're so scarce?"

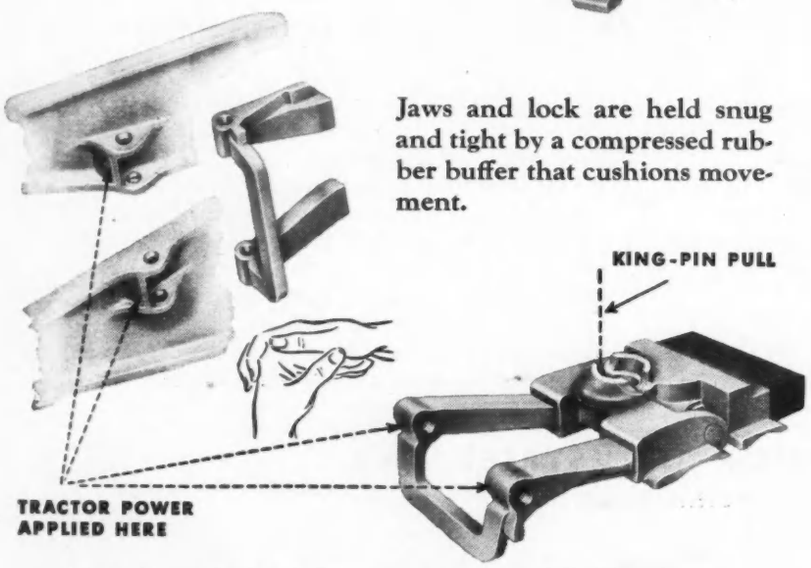
O'Leum: "Of course they're scarce. So are all good things. Look at gin

(TURN TO PAGE 128, PLEASE)

Pins Don't Do the Pulling in the *Safety* 5th Wheel

Ever shear a 5th wheel pin? You *won't* with ASF Safety 5th Wheels! More than 40 years of railroad coupler experience designed this *better coupler.*





Jaws and lock are held snug and tight by a compressed rubber buffer that cushions movement.

Pins carry *no part* of the load in ASF Safety 5th Wheels—even in the mounting brackets—and the same cast steel locking arms which hold jaws locked securely, transmit *all tractor pull* directly from sockets on the plate. Pins serve merely as hinges for coupling and uncoupling, and they last *indefinitely.* This is but one of the many features that mean safety in service—*safety* you should have. Write, today, for the facts. Distributors everywhere. *Automotive Division, American Steel Foundries, 400 N. Michigan Ave., Chicago, 11.*

A·S·F *Safety* 5th WHEEL

Quality Electrical Equipment—
Prompt, Efficient Service—
GET BOTH
Where you see this Emblem



STRATEGICALLY LOCATED throughout the country are 439 Leece-Neville Service Stations, including 52 Central Distributors, all now identified by the emblem shown above. The men operating these stations know from experience that the electrical equipment they sell—built to the high quality standard for which Leece-Neville has been famous since 1910—requires *far less servicing*. But when your Leece-Neville equipment does need attention, you will find that these men know something more: How to recondition it quickly, efficiently, dependably. Look for the emblem identifying the Leece-Neville Service Station nearest you. A complete Service Station Directory is available on request. *The Leece-Neville Co., Cleveland 14, Ohio.*

LEECE-NEVILLE

Pioneer and STILL Quality Leader

CRANKING MOTORS • GENERATORS • VOLTAGE REGULATORS • SWITCHES

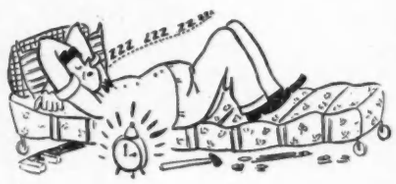
MECHANICS AS I KNOW THEM

(CONTINUED FROM PAGE 126)

and Bourbon. I hear though that a professor at Harvard who couldn't get a Ford fixed has trained some monkeys to work on cars. I haven't seen any though. Probably all went in to designing. But we did have a mechanic here for a while who once dropped a rear end without first draining it. We called him Boppo. Say, come to think of it, he did walk low to the ground, with a funny bag in his pants. And what a collection of monkey wrenches he had. I wonder. . . ."

Reporter: "Is there anything else you have observed about mechanics, Mr. O'Leum?"

O'Leum: "Well, yes, to be frank. Mechanics are very thirsty people, and I understand their membership in the W.C.T.U. is the lowest of all the crafts. When your mechanic says he's not drinking any more, you understand he's referring to his capacity—not that he's given up drinking. And, of course, there's that old jerk, 'circumstantial evidence.' Take all the empty beer bottles around this shop. It would surprise you to hear that they're here for a scientific purpose, wouldn't it? There's a sample of oil from an engine in one, oil from a differential in another and a little brake fluid in that. We use beer bottles just like a chemist uses his flasks. But people think the worst. An evil old world, Mr. Reporter. And did you ever see a mechanic stagger? Well, if by any chance you did, I'll tell you the cause—Fumes—gasoline fumes. He smells them all day, and they make him dry, so he staggers to Nick's to quench his thirst. And later he staggers back to more fumes, and so he goes his dizzy way, round and round.



"And their sleeping habits. Regardless of what drivers say, mechanics do not sleep on creepers. They're too hard. That shiny head rest that looks so inviting is nothing but a block of wood (harder even than any mechanic's head) with a piece of cloth and a few horsehairs over it. But I expect to do something about that—something in the way of a bed spring with wheels on it and an inflated rubber mattress. After all, compressed air is cheap. I guarantee my invention will keep a mechanic in a shop—even after closing time.

"And take the matter of tools—closer to a mechanic than his underwear. If mechanics lost all the tools they claim they do, there wouldn't be a wheel turning in the country. Watch them around a gas bucket happily splashing as they clean their tools. By the time they get through returning tools that belong to the other guys, they all come out even, except for one old bastard crescent wrench once given away with mowing machines which no one will claim, and a few others that have been heaved over the railroad track in a moment of pique.

"And as mechanics get thinner and grayer, their tool boxes grow bigger and bigger. Your master mechanic

(TURN TO PAGE 130, PLEASE)

STANDARDIZE WITH *"Knock-Out"* VALVE SEAT RINGS . . . . INSERT THEM WITH A K-O RESEATER

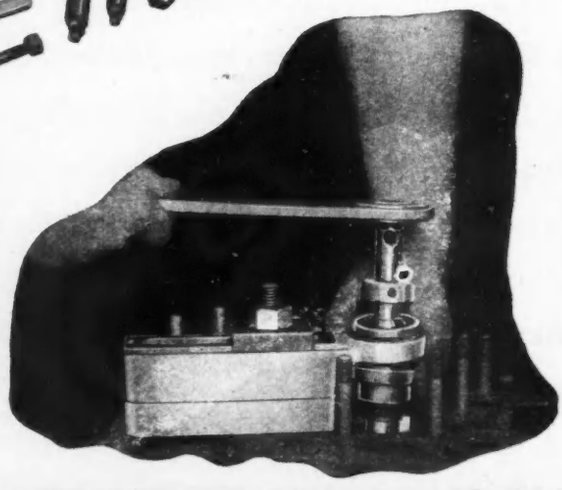
Your jobber will be glad to give you complete information . . . Ask him today without delay!



MODEL R204 UNIVERSAL RESEATER SET

REPAIR TODAY THE K-O WAY!



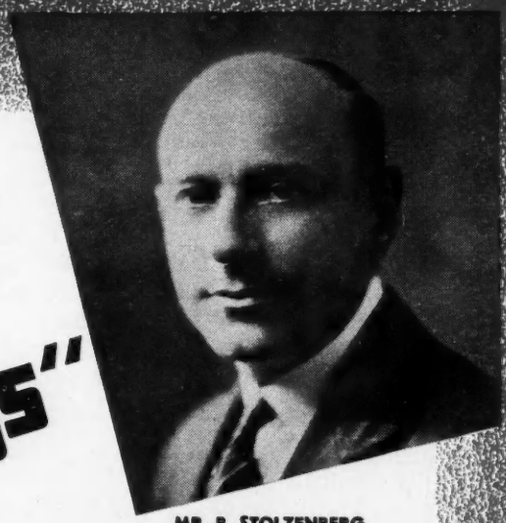


SEE YOUR "K-O" JOBBER OR WRITE TO

K.O. LEE COMPANY, ABERDEEN, S. D.

Manufacturers of Fine Tools for Over Thirty Years

"We've *standardized* on Armstrongs"



MR. B. STOLZENBERG
National Builders Supply Corp.
Glendale, N. Y.

● "Our need of tires that can stand abuse caused by delivering heavy loads of building materials and coal, summer and winter, on and off the road, has been met most satisfactorily and economically by Armstrong Tires. We've tried them all and have standardized, as a result of our experience, on Armstrongs."





HUNDREDS of tire-wise commercial car operators are now acutely aware of this important fact: *you can't buy a better tire than an Armstrong!* Since 1912 Armstrong has pioneered in making tires that wear longer and cost less. You can count on Armstrong to give you a tire that will perform better, last longer, stand up under all conditions and cost you less per mile of use. That's not a statement—it's a promise!

For literature or information write your Armstrong Distributor or to Armstrong Rubber Company.

ARMSTRONG TIRES

Manufacturers of Quality Tires and Tubes Since 1912 · General Offices and Plant—400 Elm Street, West Haven, Conn.

MECHANICS AS I KNOW THEM

(CONTINUED FROM PAGE 128)

always clings to his old tool boxes—worse than a woman with hat boxes—small to large, to larger, showing his progress through the years.

"And another thing, take the housekeeping habits of mechanics. They never pick anything up, because they know anything picked up and put away safely is lost forever. Why I've seen a mechanic go unerringly to some dark corner, rummage a bit, and come out with an odd-sized nut and bolt that he threw there six months ago. It would take three stock clerks two hours to look through their filing system and come back with the report there was no such a thing.

"Well, I see the Boss is waking up, so I'll say goodbye. . . . But come around again. . . . Always glad to . . . Hey! What's happened! . . . What kind of inspection do they give at your place? . . . You have no seat in your pants! . . . Why I believe you've sat all this time in that battery acid on the running board. I just changed batteries in this horse. . . . Sure, I know it burns. It's bad enough on your hands. . . . Tell you what to do. Run into the office and get that box of baking soda, scatter some on a chair and sit in it for a while. . . . It'll work just like baby powder, you know. Ha! Ha! Ha!"

END

(Please resume your reading on P. 52)



a battery as good as the name...

EDISON!

EDISON, the greatest name in electricity, is on quality products that most people use every day. That simple statement of fact means one thing: Customer satisfaction. When you buy an Edison battery, you buy Edison quality . . . a guarantee of performance as great as the name.

From factory to customer, Edison follows through. *Your* problems are *our* problems. When you have an Edison battery, you are assured of our continuing interest in its performance throughout its life. See your Edison dealer today.

you can always rely on an EDISON!



Edison BATTERIES

THOMAS A. EDISON, INC., EMARK DIVISION
PLANT NO. 1, KEARNY, N. J.

QUIZ ANSWERS

(CCJ Quiz on Page 65)

1. d. When the temperature drops to 32 deg. Fahr. all your troubles start.

2. b. North Dakota. Temperature at the U. S. Weather Station at Bismarck will run around 8 to 9 deg. Fahr. during January. The average number of days that the temperature drops to zero or lower is 53 per year.

3. a. A solution of 40 per cent methyl alcohol and 60 per cent water will give you protection to 20 below 0 deg. Fahr. The same protection of either ethyl alcohol or glycerin will protect to zero, while ethylene glycol would give protection to 10 deg. below.

4. b. To recover from a skid, steer in the direction the rear end is skidding—but avoid oversteering. Leave the clutch engaged and avoid braking.

5. b. Methyl or wood alcohol will start boiling away at as low as 148° Fahr.

6. b. Chains should never be applied too tightly. There should be enough slippage so that the tires can turn inside the chains, preventing the chains from wearing into the tires at any one point.

7. a. The SAE numbering system classifies lubricants as to their viscosity or fluidity. The lower the number, the lighter or more fluid the oil. In winter then, you want to use an oil with a lower number.

8. b. A battery that is almost entirely discharged will freeze at a little below 32 deg. Fahr. A fully charged battery, though, will withstand temperatures as low as 96 deg. below zero.

9. 1-d; 2-a; 3-c; 4-b.

10. a-false; b-true; c-true; d-false; e-true; f-true; g-false; h-true; i-true; j-true.

END

(Please resume your reading on P. 66)



The Sign of a good Jobber

Where you see this sign, you'll find Automotive Lighting and Safety Equipment that is—

DESIGNED RIGHT
MADE RIGHT
PRICED RIGHT
and SOLD RIGHT

Whether you need a replacement lens or complete safety lighting for a busy fleet, your K-D dealer has the product and the "know how" to assure you more miles of dependable highway-service for every dollar invested.

ASK YOUR K-D JOBBER!

THE K-D LAMP COMPANY

CINCINNATI 3, OHIO

INTERNATIONAL WEST COAST SPECIALS

(CONTINUED FROM PAGE 76)

been a favorite in the extra heavy-duty vehicles widely used in the West for fast over-the-highway, and heavy off-highway hauling. Other super heavy-duty Internationals include the off-highway models, W-4042-OH, W-4564-OH, W-6564-OH, and W-9064-OH, which have gross vehicle weight ratings of 40,000, 45,000, 65,000, and 90,000 lb. respectively.

Engine Options

ALTHOUGH the International-Continental S-6749 engine is listed as standard, all six of the new International West Coast models are available with any one of the following optional engines: the Cummins diesel HB-600, NHB-600, and NHBS-600 (supercharged), and the Hall-Scott HS-400 (gasoline), which is also well known to operators of heavy-duty equipment in the western states.

Clutches in these heavy-duty Internationals are of the 2-plate type, 14-in. diameter, with all engines except the NHBS-600 and the HS-400 with which 15 1/2-in. clutches are used. A selection of six Spicer heavy-duty transmissions of both four and five speed types is available to meet the specific requirements of the operation. Optional equipment also includes a choice of four 3-speed Spicer auxiliary transmissions of either the direct or over-drive type.

Gear Ratio Options

THE rear axle of the W-042-H is Timken's S-200 double-reduction type with a selection of 3 gear ratios of 6.42, 7.08, and 7.84 to 1 optional. The W-4042-OH is equipped with a Timken U-200 double-reduction with gear ratios of 7.84 and 8.74 to 1 as optional. The 6-wheel highway-type unit, model W-4064-H, is equipped with Timken's SW-3012 tandem-drive with a ratio of 6.166 to 1. The W-4564-OH, W-6564-OH, and W-9064-OH are also equipped with Timken tandem-drive axles with suitable ratios to meet the heavy-duty service to which these units will be sub-

(TURN TO PAGE 134, PLEASE)

Edwards gets the Preference



From More and More Fleet Owners Because of Low Maintenance Costs and Long Life



• Large fleets of Edwards semi-trailers have grown from the satisfactory performance of a single original Edwards. Today Edwards is the choice of an increasing number of truckers because:

Edwards tried and proved engineering principles mean trailers of longer life and dependability.

The expert craftsmanship in every Edwards means lower maintenance costs on the job.

Investigate Edwards before purchasing your next trailer. Write today for facts and prices.

EDWARDS IRON WORKS, INC., SOUTH BEND, INDIANA

EDWARDS 



IF YOU HAD A "FLYING MIKE," WHAT COULD YOU DO WITH IT?

☐ SUBSTITUTE IT FOR THE FLY-WHEEL IN YOUR TRUCK

☐ MEASURE THE THICKNESS OF STEEL SHEETS

☐ RECAP YOUR TIRES

☐ CRANK YOUR ENGINE

Answer on Page 134

STEPPING FROM AUTO TO TRUCK OR BUS

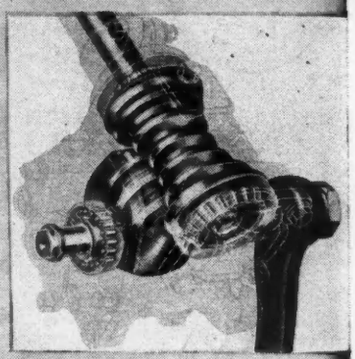
DOESN'T INCREASE A MAN'S STRENGTH OR STATURE

◐ Since Gemmer pioneered ease of steering, the vast majority of passenger cars have it. A truck or bus driver gets used to it in his own car.

◐ But when this driver steps into the cab of a truck or bus having ordinary steering, he has to be ready to exert greatly increased effort on the steering wheel.

◐ He cannot be expected to grow in the act of changing from his car to truck or bus. Gemmer Steering MAKES CERTAIN HE DOES NOT HAVE TO — the vehicle so equipped has passenger car ease of steering. It is quite natural that Gemmer equipped vehicles are preferred by drivers. Fleet owners and operators prefer vehicles so equipped because decreased driver fatigue makes for quicker trips, fewer accidents.

◐ Gemmer Steering Gears are simple, efficient, sturdy. An hour glass worm mounted on roller bearings bears on gear teeth that roll. Roller tooth and roller bearings banish friction, minimize wear. There is no lost motion; rarely, if ever, need for maintenance. Steering is always firm, responsive, positive, with absence of rubbery feeling or wander.



◐ *GEMMER... The Symbol of Steering Excellence*

STEERING WON'T PUT EXTRA DEMAND ON THE DRIVER IF IT IS

GEMMER STEERING

GEMMER MANUFACTURING CO., 6400 MT. ELLIOTT, DETROIT 11, MICH.

INTERNATIONAL WEST COAST SPECIALS

(CONTINUED FROM PAGE 132)

jected in logging, mining, oil-field and similar jobs.

All of the new International West Coast models are equipped with air brakes, front and rear, of ample size and capacity. The 4-wheel models have semi-elliptic springs with auxiliary rear springs. The 6-wheel models have semi-elliptic springs with full-floating rear spring suspension. Steering gear is of the roller-bearing cam-and-twin lever type, outboard-mounted where it is easily accessible for adjustment and service. Disc-type wheels are standard on all models.

One outstanding feature of these International-engineered heavy-duty vehicles is the special rubber-cushioned auxiliary transmission mounting which facilitates the easy removal of this entire unit for servicing. Engines are 3-point mounted and rubber-cushioned.

Cab Features Comforts

DRIVERS will like the convenience of the big International 3-man cab for these heavy-duty units. This cab provides unusual visibility; all controls are easy to reach. It is 3-point mounted and rubber-cushioned against noise, vibration, road shock, and distortion. The extra wide 2-piece windshield and large door windows provide exceptional visibility. The adjustable driver's seat has foam rubber cushions. Standard cab equipment includes hot water heater, fresh air ventilating system and defroster, screened cowl top and side ventilators, ventilating windshield wings, dual windshield wipers, dual sun visors, rear vision mirror, and dome lamp. Provision is made for the installation of radio receiver or 2-way radio equipment. In the design and construction of the International cab everything possible has been done to provide complete driver comfort and convenience.

END

(Please resume your reading on P. 78)



F. E. Nolen, newly - elected president of the National Automotive Parts Assn.

● WHAT IS IT?

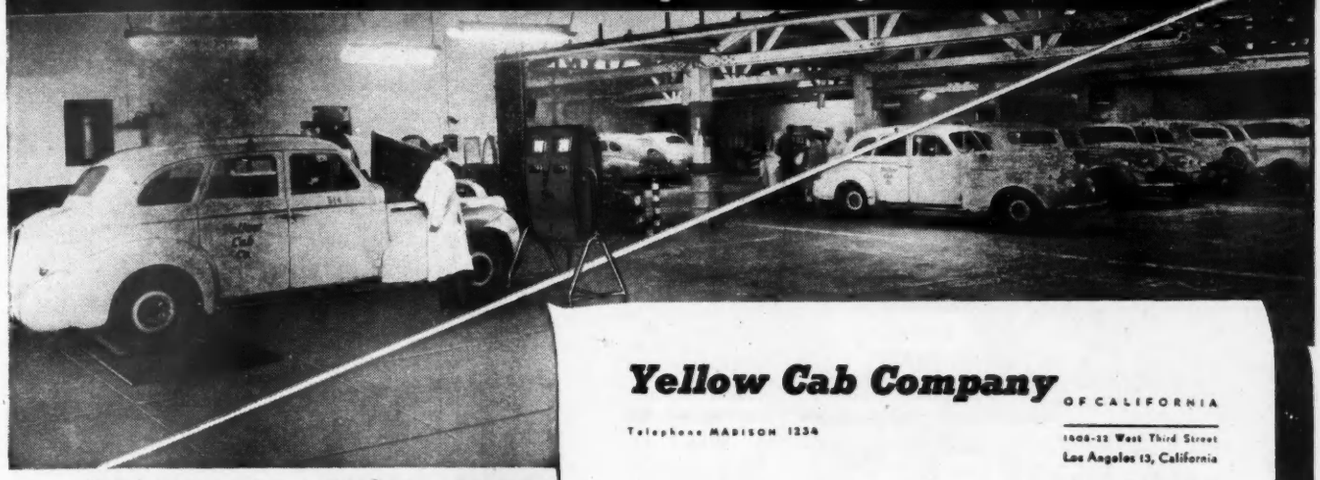
ANSWER

(To Question on P. 132)

You would use it to measure steel sheets. A "Flying Mike" is an electrolimit gage or micrometer that is capable of measuring strip steel while it is being produced at the rate of 1500 feet per minute. Before its development, hand gages could measure only 300 feet per minute, and the rolling mill had to be held down to that pace.



Yellow Cab of California says



of MOTO-MIRROR:

1. "... we have increased our gas mileage 10% and we attribute this increase and resultant saving to the Clayton Dynamometer."

2. "... enables us readily to find all hidden trouble..."

3. "... checks under actual load conditions..."

4. "... troubles are instantly detected by using the Moto-Mirror."

5. "... a final check and tune-up on the Moto-Mirror ... assures peak performance for each unit."

Yellow Cab Company OF CALIFORNIA

Telephone MADISON 1234

1008-22 West Third Street
Los Angeles 13, California

November 21, 1945

Clayton Manufacturing Company
1812 Lemon
Alhambra, California

Gentlemen:

Having used your Moto-Mirror Dynamometer for many months, we are pleased to have this opportunity of testifying to the advantage of this Service Equipment in fleet operation.

At the time we decided to make the purchase, we faced an ever increasing fuel consumption, and this was serious because of Government gas restrictions. Also most of our cab fleet is composed of 1939 models and naturally we were confronted with many mechanical difficulties which would not happen to newer models.

The ability of 2 the Moto-Mirror to actually duplicate road operating conditions enables us to readily find all hidden trouble and make our 3 checks under actual load conditions. Shortly, we discovered that the loss of efficiency was not the result of any one trouble; that each cab represented an individual problem. Many times we discovered the difficulty was the result of a combination of circumstances.

A few of the 4 troubles we found that contributed to the drop in our fleet efficiency, and can be instantly detected by using the Moto-Mirror, include: ignition system, timing, carburetor, fuel system, exhaust, governors, valves, rings and gaskets. After diagnosing 5 the trouble, we make repairs in our own shop, then give the cab a final check and tune-up on the Moto-Mirror. This assures peak performance for each unit.

A review of our records indicate we have increased our gas mileage 10% and we attribute this increase and resultant saving to the use of the Clayton Dynamometer.

Very truly yours,

Geo. E. Worster
President

GEW:mf

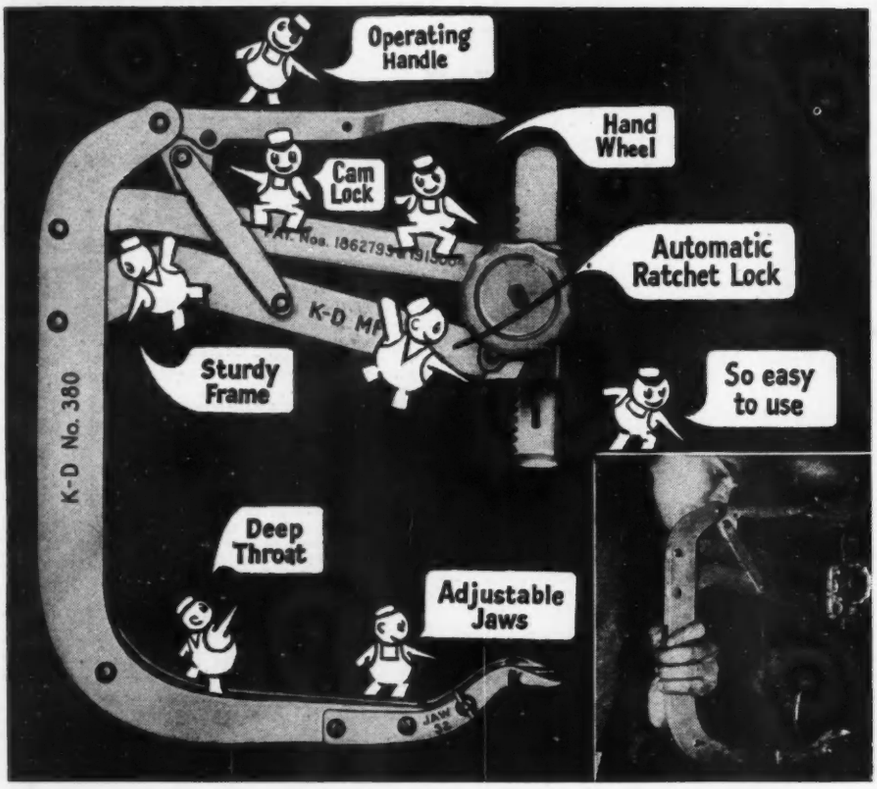
MOTO-MIRROR is the first practical service dynamometer. Easy to operate and install. PRICED WITHIN THE REACH OF ANY FLEET OPERATOR OR SERVICE SHOP. Let it build your profits by cutting your costs!

CATALOG No. 61-A completely describes MOTO-MIRROR and its uses. When you write please give us the size and type of your fleet so that we may serve you better.

CLAYTON MANUFACTURING COMPANY

CHICAGO ALHAMBRA, CALIFORNIA PHILADELPHIA





THE LITTLE GUY'S GOT SOMETHING THERE!

Fact, he's got everything—everything that makes the K-D 380 so versatile and easy to use. Turning the hand wheel on the first spring sets the depth of the plunger bar and the automatic ratchet engages. On all other springs the speedy operating handle is used, the overcenter cam lock holding spring compressed. Two sets of adjustable jaws. Sturdy steel frame, strong enough for any job within its capacity, old or new, L-head or valve-head. See the whole line at your jobber's or write for catalog to K-D Mfg. Co., Lancaster, Pa., and Hamilton, Ont.

K-D TOOLS
The Hustlers for Your Toolbox!

TRUCKS 5 YEARS HENCE

(CONTINUED FROM PAGE 46)

parable to standard expectancy and experience indicates that new materials and new methods of manufacture should be considered. Again, we cannot consider aircraft prices or aircraft engine life as a criteria.

The clearance problem of the piston is also one of concern and some positive control features should be built into them so that minimum clearances prevail.

In the case of pistons for truck engines being considered, the piston manufacturer feels very confident of meeting the requirements.

Bearings

WITH respect to the high output engine we are considering, one of the vital developments which must come is a change in bearing construction or materials used in main, connecting rod and wrist pin bearings. Of these, the one which will be the crux of the development is the crank pin and it seems very certain that the straight copper lead bearings that we now use will have to give way to another alloy or alloys. It would seem desirable that we should consider at least the possibility of a 50 per cent increase in bearing load with an overload running as high as 75 per cent. Discussion with various sources reveals a great deal of research being done along the line of producing a bearing such as is used in aircraft engines which are capable of standing intermittant loads with pressures as high as 7000 lb. Their present idea is to develop a combination perhaps using such alloys as are used in the aircraft bearings with such disposition and process of manufacture as to call for a price increase over our present truck engines—but certainly not more than twice what is now paid for good copper lead. It is obvious that if that is the thinking at the present time, when the use of these bearings becomes a matter of fact one will see the price differential between the two bearings become very much less. We, therefore, then have possibilities of new alloys for bearings including the tri-metal bearing and perhaps the introduction more generally of aluminum alloy

(TURN TO PAGE 139, PLEASE)

TRUCKS 5 YEARS HENCE

(CONTINUED FROM PAGE 136)

bearings disposed on such backing as to remove some of the objections of the present type of aluminum bearing.

Valves

TO make possible the output desired, we are obviously going to depend on the valve picture improving as far as kind and cost are concerned. Liquid-cooled valves are not new to truck engines but our future unit will require more and more such materials as sodium and we must still get them at no greater cost than now. In fact, we should expect them to be lower in cost.

We have long known the effect a cool exhaust valve can have on the octane requirement of an engine and with the future engines becoming more critical, both inlet and exhaust valves are due to be considered seriously in the light of kind and cost.

The viewpoint of the valve manufacturers is an encouraging one. They, however, still have the problem of dealing with compounded fuels as far as valve seat deposits are concerned and the development of a stable rotating mechanism is one effective way of dealing with this. Indications in this respect are very favorable and with the need for same possibly rapidly increasing, several solutions of the problem may be expected.

Supercharging

THERE are some indications that the most desirable supercharger is the centrifugal type. This is because it can first be more readily driven from the engine exhaust system and we can thereby get the boost at the time we want it.

Fundamentally, the supercharger installation should not cost more per horsepower gained than the cost of the same power increase in a larger engine. The weight saving possibilities of the supercharger should be considered a plus.

Injection System

THIS is obviously a part of future engine development which should be pursued with vigor in the next five years both as to cost, which at present is much too high, and to the characteristics which will have a

(TURN TO PAGE 142, PLEASE)

● WHO IS IT?

ANSWER

(To Question on P. 136)

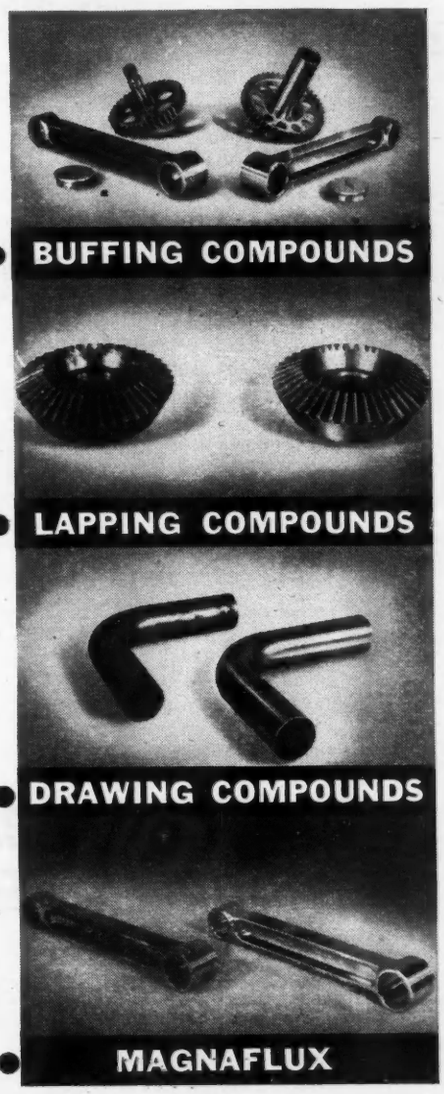
Charles E. Sorensen, when he was in charge of Ford's pattern shop in 1904, earned the nickname "Cast Iron Charlie" because of his passion for castings. By replacing expensive machined forgings with cast iron parts, he helped bring the price of motor vehicles within the reach of the average American. Later, his work on centrifugal castings of steel brought him a new moniker, "Cast Steel Charlie." Sorensen is now head of Willys-Overland Motors, Inc.

CHECK THESE POINTS

for

Triad Emulsion

Cleaners



Triad Emulsion Cleaners quickly and easily remove buffing, lapping and drawing compounds, as well as magnaflux, in metal parts washers or still tanks. In addition, temporary rust protection of metal parts between machining is provided.

These TRIAD EMULSIONS are only a part of the complete line of Detrex water-soluble cleaners. A case history file of unusual cleaning procedures is available either by home office or local inquiry.

DETREX CORPORATION

DETROIT, MICHIGAN

A-109

The *ONE* Belt that is ... *Specially Engineered* for TRUCKS and BUSES...



The Patented
Concave Side
Like all Gates Belts, the Gates Truck Belt is built with the famous, life-prolonging Concave Side — a Gates Patent.

Special Heavy-Duty Compound

30% Stronger Cords
Than Used in Passenger Car Belts

Multiple-Ply Cover
Much Longer Wearing Than On Passenger Car Belts



Make Sure The belt You get has this (T.) on the belt container

This distinctive "T" is the Gates trade mark used ONLY on the Gates Truck Belt which has been *specially engineered* for truck and bus service. You can be assured of getting the belt designed for this more demanding service *only* by seeing to it that you are delivered belts which bear this Gates "T."

* REG. U. S. PAT. OFF.

Read What the Biggest TRUCK BELT USERS Say:

80% LONGER WEAR — **CHICAGO, Ill.**
"We are getting 80% longer wear than any other belt ever gave us."
All American Bus Lines.

CUTS COSTS 75% — **SAN PABLO, Calif.**
". . . has reduced our belt replacements about 75%."
R. A. Cenyes.

80% LONGER LIFE — **OMAHA, Nebr.**
"Our records show 80% longer life for Gates Truck Belts."
Watson Bros. Trans. Co.

75% MORE SERVICE — **SAN ANGELO, Tex.**
"We're getting 75% more service than from any other belt we ever used."
Beard Machine Shop.

LONGER WEAR — **ELIZABETH, N. J.**
". . . much longer belt life and much less servicing."
Morey-Larue Laundry.

70% INCREASED LIFE — **LEXINGTON, Ky.**
"We have increased belt life about 70% with your Truck belts."
Lexington Railway System.

MANY MORE MILES — **GENEVA, N. Y.**
". . . many more miles of service than even pre-war belts."
Market Basket Corp.

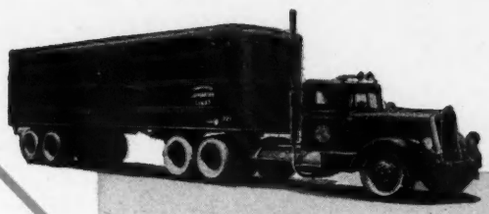
50% LONGER SERVICE — **DES MOINES, Iowa**
". . . is giving about 50% longer service over even pre-war belts."
Iowa Road Building Co.

OUTLASTS ANY OTHER — **SHREVEPORT, La.**
". . . outlasts any other truck belt we ever used by one-third or more."
Louisiana & N. W. Trans. Co.

---That's Why Actual Records of Big Operators Show 50% TO 80% LONGER WEAR

"Use Only 1/2 As Many Belts"

Actual records of many Fleet Operators who are using Gates Truck Belts show that they are now using only ½ as many belts as they previously had to buy. Cutting belt purchases squarely in half is, of course, a very substantial saving in itself—yet this is actually only the *smallest part* of the savings enjoyed by users of Gates Truck Belts.



You Save *Even More* in Servicing Time and Other *COSTLY DELAYS!*

Every time a belt has to be replaced on a truck or bus, valuable *operating time* of that unit is *lost*. Every delay for belt servicing or belt adjustment takes its toll from the productive operation which is your only source of income. Very often, in critical instances, even slight delays can cost a lot of dollars. Is it any wonder that the belt which so greatly reduces these costs—the Gates Truck Belt—is now used exclusively by hundreds of the most successful operators of truck and bus fleets?

You Wouldn't *THINK* of Using a Passenger Car TIRE on a Truck!

Why Use a Passenger Car Belt?

You know, when you think of it, that trucks and buses put a heavier load on belts just exactly as they do on tires. A typical truck belt, for example, must carry more than 3 times the horsepower load of a passenger car belt. Trucks and buses run longer hours, change speeds more often, accelerate and decelerate more abruptly, with more stops, starts and idling in low gear.

That is why the belt that is specially engineered for truck and bus service—the Gates Truck Belt—is giving its users fully 50% to 80% longer wear in addition to other savings which, as we have noted, are of even greater importance.

When you have read the candid statements of Gates Truck Belt users printed on these pages, we believe you will want to call your jobber and tell him to send you some Gates Truck Belts TODAY!

T 4512

USE ½ AS MANY BELTS — **NEWARK, N. J.**
"Since adopting Gates Truck Belts we are using only half as many belts as before."
Bloomingdale Dairy Co., Inc.

CUTS SERVICE DELAYS — **OAKLAND, CALIF.**
"We are getting fully 75% longer wear with corresponding reduction in servicing time and belt adjustment delays."
Carnation Milk Co.

80% TO 100% BETTER — **KANSAS CITY, Mo.**
"Gates Truck Belts are doing an 80% to 100% better job for us."
Adams Transfer and Storage.

BIG CUT IN COSTS — **NEW ORLEANS, La.**
". . . plays an important part in keeping our maintenance costs down."
Yellow Cab Co.

WEARS 75% LONGER — **NASHVILLE, Tenn.**
". . . gives about 75% longer wear than any other belt we ever used."
Wilson Truck Co., Inc.

90% LONGER SERVICE — **SACRAMENTO, Calif.**
". . . gives 90% longer service than even your pre-war belt."
W. T. Smith, Shop Supt., Gibson Lines.

50% TO 60% MORE SERVICE — **JARREL, Tex.**
". . . giving 50% to 60% more service—far the best we've used."
Jarrel Motor Co.

50% TO 60% LONGER LIFE — **MAYWOOD, Ill.**
"Our records show 50% to 60% longer wear."
Midwest Transfer Co.

Gates Jobbers Now Have Stocks to Serve You

THIS IS A Gates PRODUCT

THE MARK OF SPECIALIZED RESEARCH

The GATES RUBBER CO., Denver, U. S. A.

World's Largest Makers of V-Belts

TRUCKS 5 YEARS HENCE

(CONTINUED FROM PAGE 139)

marked effect on maintenance. A carburetor is a simple instrument to maintain. Further, it would seem that with a gasoline engine designed for an injection system, size for size with a carbureted engine, we should obtain at least a 25 per cent decrease in fuel burnt.

Diesel Engines

BECAUSE it seems that the major development in reciprocating engines, not forgetting the two-stroke, will center around that type of engine, the diesel has not been included. The fuel picture is predominantly in favor of striking gasoline engine progress in truck engines and there are other economics outside of fuel that further influence our thinking. Normal refinements can, of course, be expected in diesel engines.

Cooling

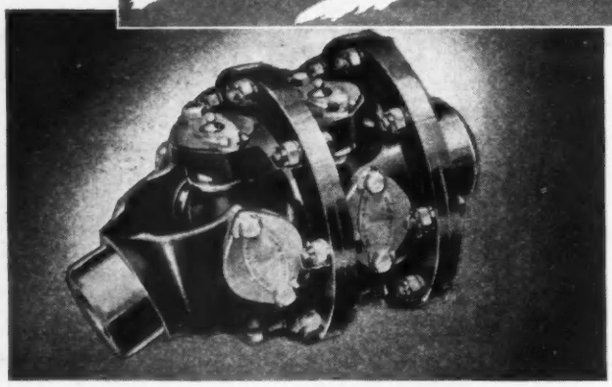
ONE of the developments which calls for serious consideration is that of cooling—both of the engine and the oil. It would seem very desirable to increase the operating temperature of our engines and this development will lead into the use of other solutions than water. Given proper plumbing and pumps designed for pressure operations, the possible reduction in size and cost of even the conventional type radiators is intriguing. We need an oil cooler badly for future engines—a simple easily cleaned unit that takes up no more room than a generator does now.

Transmissions

THE transmission problem is a very complex one in that from that inception of the straight spur gear transmission with the simple gear shift lever, considerable attempt has been made to either refine or obsolete that form by various forms of converters, automatic shifting devices and various other innovations. However, the truck transmission as of today is basically not a great deal different than from any years in the past.

(TURN TO PAGE 144, PLEASE)

Stamina



Purposly designed with enough reserve endurance to give uninterrupted service under the most gruelling conditions.



FREE ENGINEERING DATA: *Write Dept. 16 for engineering bulletins and specifications on Blood Brothers Universal Joints.*

BLOOD BROTHERS
UNIVERSAL JOINTS
BLOOD BROTHERS MACHINE CO.
ALLEGAN, MICHIGAN
DIV STANDARD STEEL SPRING CO.

WHICH IS IT?



CAN YOU HELP OUT THIS POOR COMMENTATOR BY TELLING HIM THE CORRECT PRONUNCIATION OF THE NAME "KNUDSEN"?

☐ -KUH-NUDD-SEN
☐ -KUH-NOOD-SEN
☐ -NUDE-SEN
☐ -NOOT-SEN

Answer on Page 144

Your NAPA Jobber is a Good Man to Know!



WHY? **The finest and broadest group of lines available to any jobber from a single, nearby source . . . An *organized* system of supply and operation which gives your NAPA Jobber more time to devote to *your* problems in servicing cars, trucks, buses and tractors of all makes . . . You can be sure of quality and complete cooperation, wherever you see the NAPA Seal.**

NATIONAL AUTOMOTIVE PARTS ASSOCIATION • DETROIT 1, MICHIGAN

N·A·P·A
National Automotive Parts Association
Assurance of Quality

NAPA

is the largest Independent Parts Organization in the Industry!

American Brakeblok — BRAKE LINING · CLUTCH FACINGS · FAN BELTS · RADIATOR HOSE
Allied WISCONSIN — PISTONS · SLEEVES
Spicer — UNIVERSAL JOINTS
MONMOUTH PRODUCTS — ENGINE BEARINGS · CLUTCH PARTS · BOLTS AND BUSHINGS
TRICO — VACUUM OPERATED SAFETY PRODUCTS
Allied GRAPHO — WATER PUMPS · PARTS · PACKING
BROWN LIPE — GEAR BOXES
Buffalo — MUFFLERS
MicroTest — GEARS · AXLE SHAFTS
STANDARD — GREASE RETAINERS
DETROIT — UNIVERSAL JOINTS
BALKAMP — PARTS FOR FORD · CHEVROLET · PLYMOUTH
Allied A.P.C. — VALVES
ECHLIN — IGNITION PARTS
Allied CELORON — TIMING GEARS
DITTMER — TRANSMISSION GEARS
Allied RAYMOND — VALVE SPRINGS
RARITAN — ROLLER BEARINGS
New Britain — HAND TOOLS
PRECISION — PISTON PINS
DUCKWORTH — TIMING CHAINS
PURITAN
MARTIN-SENOUR — FINISHES
Belden
DOUBLE DIAMOND
FEDERAL
UNITED — PARTS FOR BRAKES

TRUCKS 5 YEARS HENCE

(CONTINUED FROM PAGE 142)

There is, of course, naturally at the present time, a great deal of speculation in the truck field as to the use of automatic transmissions. This comes from two sources—one being due to its development in the passenger car field and the other in the bus field.

Looking into the future development picture, it would seem that we should replace the present gear boxes ultimately with some easier form of handling gear changing particularly in city work and certainly in terrain where a great amount of use is made of the transmission ratios. The possible economics of a properly designed automatic transmission are definitely in the future picture.

It is suggested that in the period covered by this paper, very serious consideration be given to the automatic transmission and if possible using a fluid means of transmission. This item of the transmission has been demonstrated as having practically no special maintenance problems and, therefore, it makes its inclusion in an automatic transmission almost a necessity.

Whilst, however, at the moment the cost picture looms large, the history of this item is similar to others in that ways and means will be found to handle that phase. The synchronizing picture is also one of development for trucks.

A well-known transmission maker says:

"In the next few years I believe you will see the means of shifting improved by synchronizing it or a means equivalent, and power shifting worked out. The power shift problem is going to be worked out, I believe, in a manner that we can control that power and achieve it economically. I think it will be a long time before the full automatic or the torque converter with automatic gearing will be developed for the rank and file road job. In off-the-highway vehicles, the torque converter will no doubt have its place, but further development must be given to it before it is even economical for that type of truck."

Suspensions

EARLIER we predicted that the motor trucks of the future should be safe to operate at speeds as high as 70-80 m.p.h. and this involves a detailed study of suspensions, steering gears, tires and braking.

With regard to suspensions, there would seem to be a need for taking a good long look at the possibilities of changes in this respect.

There are certain fundamentals

(TURN TO PAGE 146, PLEASE)



Main Entrance To Offices
The Cleveland Hardware & Forging Co.

Since 1881 "Cleveland" has promptly met the demands imposed by changing BODIES. At our great plant new Irons are created, old Irons improved upon. "Cleveland" Irons stand up under the wear and tear of constant road vibrations and severe shock of overloading.

SEND *for* CATALOG 22 B

"CLEVELAND" IRONS ARE FORGED FROM HIGHEST GRADE STEEL

The Cleveland Hardware & Forging Co.
Established 1881
3264 East 79th St. Cleveland 4, Ohio

● WHICH IS IT?

ANSWER

(To Question on P. 142)

"Noot-sen" is the way William S. Knudsen would have you pronounce his name. He once corrected a lady who had mispronounced his name, "Madam, you wouldn't call it *kuh-nee* action, would you?"



MORE PROTECTION PER RIDE WITH QUALITY CANVAS

For rough weather and rough riding, you'll find more cargo protection per ride in a top-cotton canvas woven to higher uniformity. For the weave that gives you necessary extras in strength, toughness and weather resistance, specify tarps made from MT. VERNON Extra duck.

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Answer on Page 150



TRUCKS 5 YEARS HENCE

(CONTINUED FROM PAGE 144)

that are well known but should possibly be re-stated. Spring rates in whatever form used, must be lowered to improve the ride under light load conditions and at the same time it must provide a progressively increasing rate as the heavier loads are carried. The problem of preventing a wide change in platform loading height from minimum to maximum load must also be considered. In relation to the overall ride conditions desired, it is suggested that hydraulics be developed to provide an automatically compensated chassis height regardless of load and whilst such devices have been proposed in conjunction with the air spring, the complications of same have been too great to be seriously considered. We shall probably make progress in the future along the lines of relieving the spring of the job of starting and braking torque and concentrate on having them do their one job of absorbing the road shocks. Controlling side sway by automatic control is a very definite possibility.

In connection with the use of rubber for suspensions, forward thinking men in the rubber industry are definitely of the opinion that much work lies ahead of them but it is very promising in its possibilities. Rubber used in suspensions as an elastic element can be used in many ways: in direct compression, rotationally compressed elements, torsional shear in various forms, direct shear in various forms, and combination of shear and compression. We also look for development of the bellow-type spring which lends itself to innumerable treatments in the interests of choice of rate, increasing rate, and choice of frequency. The further attraction of rubber is that it can be employed at points of attachment eliminating lubrication and noise.

Tires

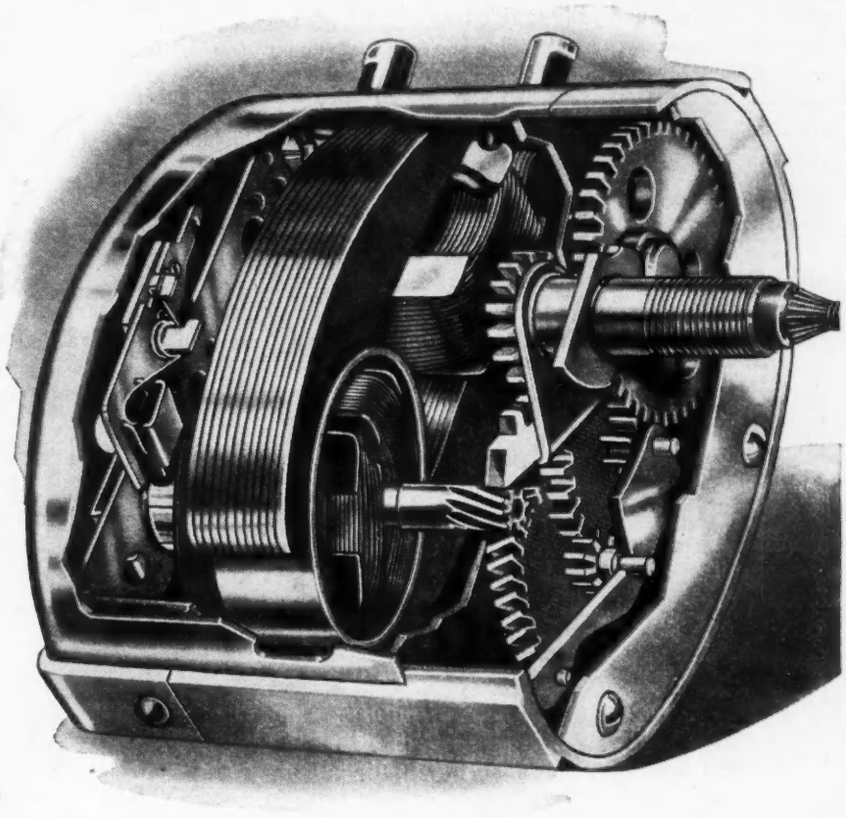
LOOKING into the possibilities of tires for these vehicles we are considering, we see the possible use of different rayons, nylon, and steel wire. Wire is 10 times as strong as cotton which, for a long time, was

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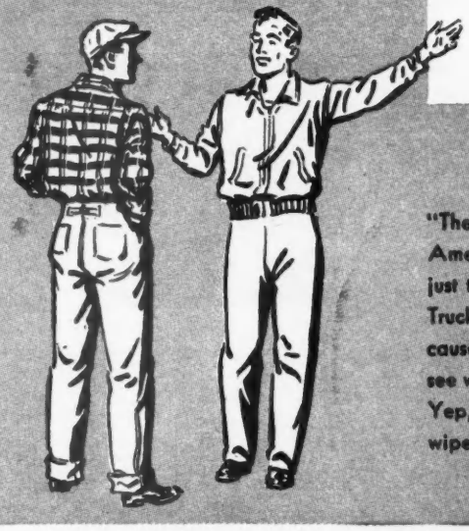
GOOD WINDSHIELD WIPERS *Never Stall*

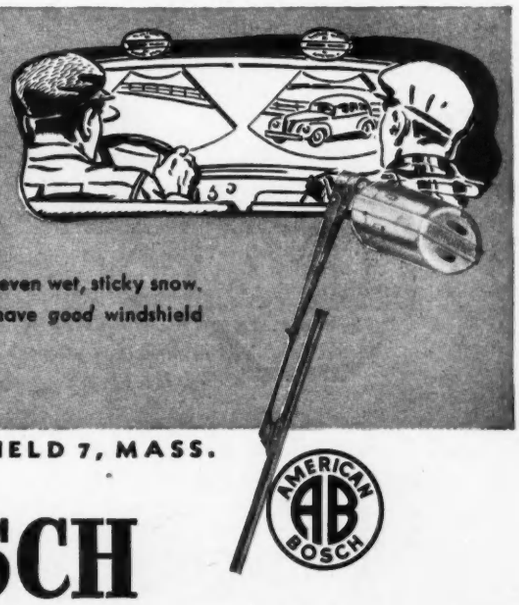


"It sure was a great day for us drivers when the boss installed American Bosch Electric Windshield Wipers on every truck in the fleet. Even on that tough grade near Johnsville, those wipers keep wiping steadily. That's because they're ELECTRIC. The load on the engine never affects them. They call 'em "Neverstall," and that's a good name for 'em."



"If you could look inside, you'd see what makes 'em good. They're rugged, and compact. To me, they look as fine mechanically as a good watch. They must be, because the one on this truck was installed before the war, and it's still going strong."





"The boss was smart when he put on American Bosch Wipers. It wasn't just the drivers' safety that he bought. Trucks and cargo are safer, too, because *we're safer.* We can always see where we're going, through rain or even wet, sticky snow. Yep, you can bet I'm sure glad we have *good* windshield wipers that *never stall.*"

AMERICAN BOSCH CORPORATION, SPRINGFIELD 7, MASS.

AMERICAN BOSCH

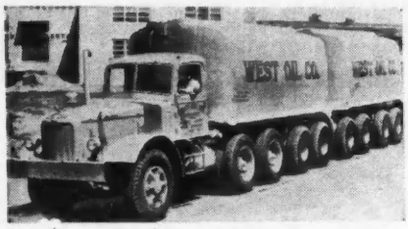
Neverstall Electric Windshield Wipers

TRUCKS 5 YEARS HENCE

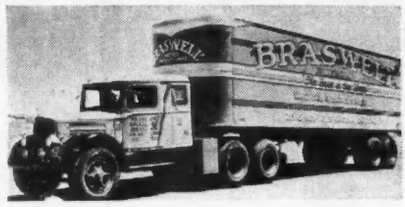
(CONTINUED FROM PAGE 146)

the standard tire cord. We are all well aware of what has happened to rayon tires and we may well look forward to other types of synthetic cords which have a promise of even more attractive results. The steel wire, which would have a greater appeal to the mechanically-minded automotive engineer, is already in a well advanced state of development and in the period of years we are considering, its development unquestionably will offer us safer tires with longer life even at these increased speeds.

One day we may be able to have automatic control of pressure by the driver and, therefore, temperature control whilst under actual operating conditions. The safety aspects of this are certainly of tremendous value. With regard to heat, the enemy of rubber and its cords, we may find ourselves in this future period using light weight metal rims which will have the advantages of better heat conductivity as well as obvious reduction in weight.



This big Mack diesel makes the task of hauling the greatest liquid load ever transported over highways a simple matter for Detroit's West Oil Co. The Mack tractor, nicknamed Big Bob, hustles the Butler-built oil transport tank unit and its capacity load of 12,000 gal. over the road on four tandem axles and a king's ransom in tires, 34 in all



A good example of efficient motor transportation is found in the operations of the Braswell Motor Freight Lines of El Paso, Tex., owned by J. V. Braswell. Forty-five tractors make up the Braswell fleet, of which 20 are heavy-duty Super Power Whites, hauling for the most part 22-ft. Fruehauf trailers, averaging 3500 miles a week

Steering

WITH regard to steering, it seems reasonable to assume that we are reaching the end of the straight mechanical gear and have reached the point where there is a necessity for quicker and easier control in future vehicles. We may be wise to consider the development right now of suitable power steering gears in which weight and cost come more nearly within the scope of the rest of the units used in these future trucks. I think it would be only fair to say at the present time, that the power steering is getting more attention than it deserves as its use is now very limited but the very spectacular results may call for power steering development to go ahead at a much higher rate. Our present steering gears, generally speaking, are very good but it is the general consensus of opinion that even as good as they are, steering, in general, demands too much physical effort and some power assistance must be considered in the

(TURN TO PAGE 150, PLEASE)

GENUINE ROAD PROTECTION

Fair weather or foul this truck meets schedules on time because It is equipped with anti-skid . . anti-slip .

ELECTRIC ELSTON SANDERS

. . . the sure, safe way to make your tires produce traction regardless of road conditions.



Wheeler Transportation Company, Saint Paul, Minnesota, operate a fleet of 38 International tractor and trailer units —all equipped with Elston Electric Sanders.

HIGHWAY SAFETY APPLIANCES, INC.
Mfgrs. of ELSTON ELECTRIC SANDERS
2429 University Avenue, St. Paul 4, Minnesota



Fleets that "float"—*on land!*

Cle-Air spring control units enable fleets of buses and trucks to "float" along the highways. For Cle-Air units effectively absorb damaging road shocks and cushion spring recoil. Thus they protect vehicle and cargo, and insure riding comfort for driver and passengers. Here are a few of the reasons why Cle-Air units are giving such outstanding performance on commercial fleets:

1. Cle-Air spring control units are not "passenger type shocks" adapted to fleets, but rugged units *specifically* designed for rigorous usage on trucks and buses.

2. Built to aircraft tolerances, Cle-Air units, when properly serviced, *last as long as the vehicle.*

3. Checking the fluid level every 15,000 to 20,000 miles is the only service normally required; this takes but a few seconds with the convenient filler plug.

4. Upkeep costs are negligible; typical is the report of one bus operator whose Cle-Air units have gone 100,000 miles at a cost of only 15¢ apiece for oil.

5. Cle-Air units are dual-acting—hydraulic and pneumatic, identical in principle with our famed Aerol landing gear that safely land 80-ton aircraft.

6. These spring control units are backed by Cleveland Pneumatic's nearly 25 years' experience in this specialized field.



For complete information on these outstanding units, write for this free booklet.

THE CLEVELAND PNEUMATIC TOOL CO.
AUTOMOTIVE DIVISION
3781 EAST 77TH STREET • CLEVELAND 5, OHIO

TRUCKS 5 YEARS HENCE

(CONTINUED FROM PAGE 148)

future. This can take the form of hydraulic or electric power and it also can be said that there is, within the range of practical possibilities, during the next year or two, the possible development of a mechanical steering gear which offers promise. This device referred to operates on an entirely new principle and, if successful, may easily serve to replace power steering units particularly on medium and heavy-duty trucks in highway service. There is no reason why it should not be used in off-the-road service also. It is interesting, however, that we have reached the stage where we can confidently look forward to a great deal of development from the angle of safety regardless of speed.

Braking

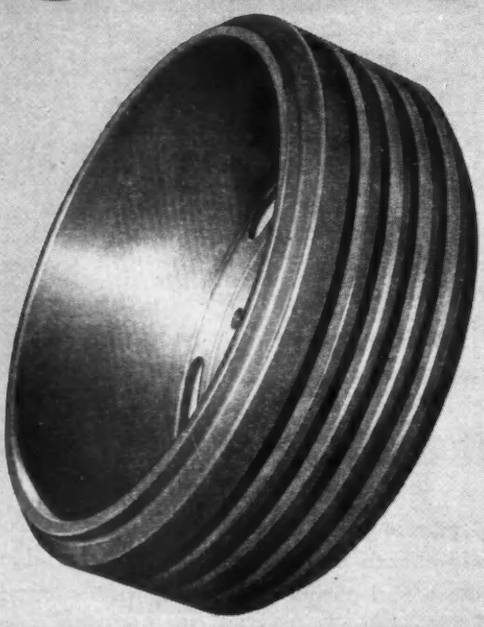
WITH respect to the question of braking for these large vehicles running at high speeds, it would seem highly important that the developments of brakes of an entirely different form than we now use be considered as the ability to usefully dissipate and handle the large number of BTU's required to stop a train carrying 70,000 lb. from 70 m.p.h. is of such a magnitude as to make us wonder how stable present day brakes would be and how long a life they would have. Any brake designs today as far as we know, must follow the pattern of rather significant improvements of the general principles of braking but at the same time the fundamental problems of brake drums—heat and checking, etc.—are still with us so long as we have the friction type brakes. The hydraulic and electrical fields may well be looked into in this respect and it will certainly be necessary to have a thorough and intensive examination of fresh materials if the existing drum type brake proves to be the only solution from the point of view of cost, weight and maintenance, all of which must be taken into consideration.

Driver

UNDOUBTEDLY, much of the success of our truck transportation picture of the future will be in the hands of drivers. We should, therefore, first consider some of the things that should be done in the years ahead of us to promote safety and comfort and ease of control to the driver. This will call for a complete reorientation of our thoughts with regard to the size and shape of the driver's compartment because, not only are our present jobs when used at high speeds definitely expensive to operate from the standpoint of the wind resistance and, therefore, oc-

(TURN TO PAGE 152, PLEASE)

GUNITE



BRAKE DRUMS

DELIVER THE MILES

There are good reasons why Gunites deliver more miles per set. There is no flex on cam and anchor sides to cause lining failure and burned spots. Gunite material is specially made with the right modulus of elasticity and the right amount of free graphite to give smooth, efficient braking, longer lining life, fewer adjustments, lower operating cost per mile. Buy GUNITES—*for better braking!*

MADE BY GUNITE FOUNDRIES ROCKFORD, ILLINOIS



GUNITE BRAKE DRUMS . . . FOR TRUCKS, TRACTORS, TRAILERS *and* BUSES

● WHAT'S NEW?

ANSWER

(To Question on P. 146)

The "Delivr-All," Marmon - Herrington's new house - to - house delivery truck has a front driving axle. Rear wheels are mounted on independently sprung suspensions.

There's a special reason why you need this

DOUBLE-DUTY OIL! now!

MANY FLEET operators have learned by experience that trucks and buses can go through service formerly unheard of—and be kept in good operating condition.

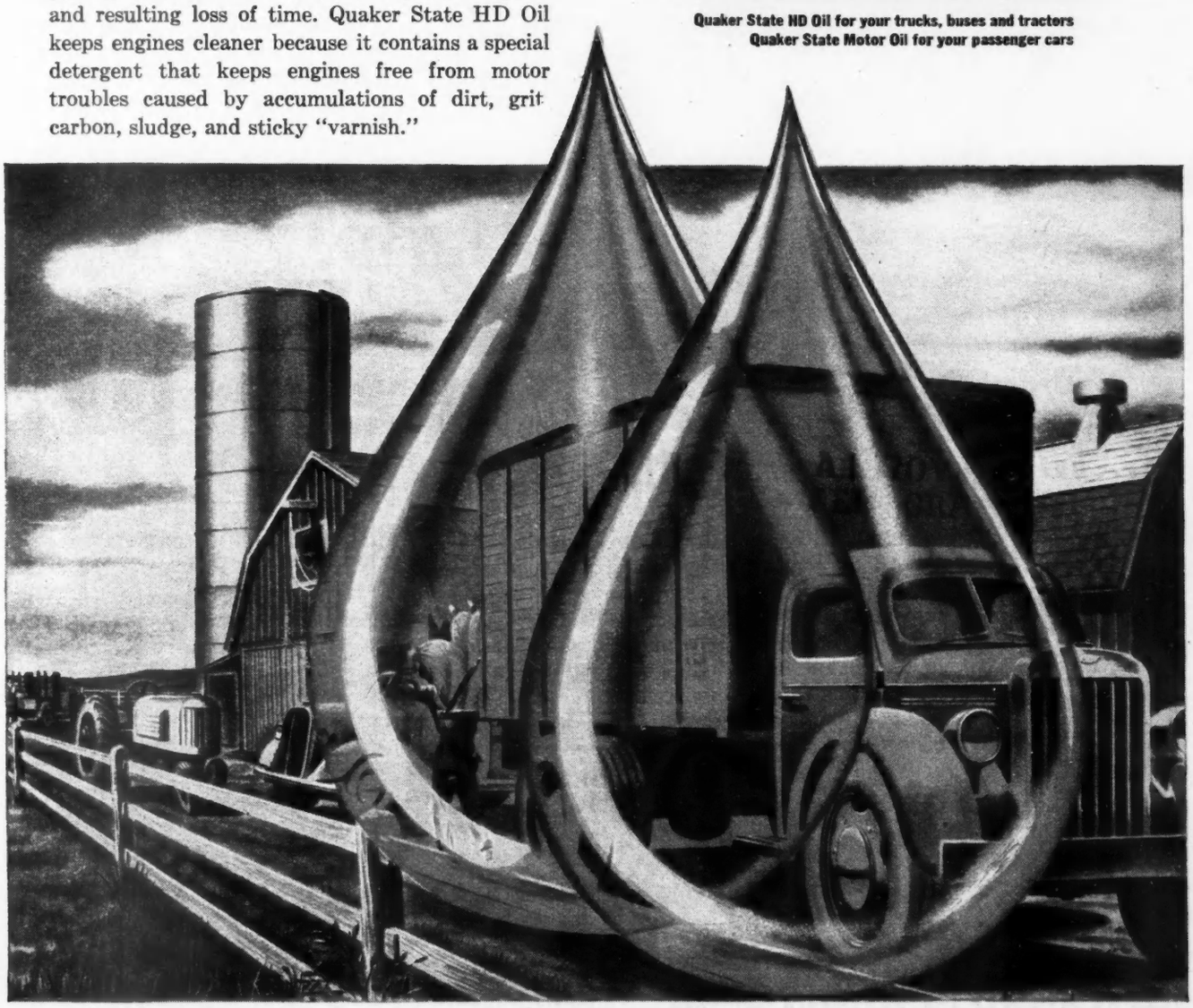
And—one of the reasons why is—Quaker State HD Oil! These men have learned that Quaker State HD Oil performs a *double-duty*. Why? 1st it *lubricates*. 2nd, it *cleans*.

Quaker State HD Oil lubricates better and lasts longer because it is made especially for tough grueling service—made to protect modern engines against heat and friction, against expensive repairs and resulting loss of time. Quaker State HD Oil keeps engines cleaner because it contains a special detergent that keeps engines free from motor troubles caused by accumulations of dirt, grit carbon, sludge, and sticky "varnish."

You need Quaker State HD Oil now—and from now on. Try it. Check the results carefully and you will use it permanently.

QUAKER STATE
HD OIL
AND QUAKER STATE SUPERFINE LUBRICANTS

Quaker State HD Oil for your trucks, buses and tractors
Quaker State Motor Oil for your passenger cars



QUAKER STATE OIL REFINING CORPORATION · OIL CITY, PENNSYLVANIA

TRUCKS 5 YEARS HENCE

(CONTINUED FROM PAGE 150)

casioning a waste of horsepower, but also they are so constructed as to have relatively little comfort for the over-the-road service. We shall, therefore, envision a compartment for the driver in which as much study has been given as that of the compartment of an airplane pilot.

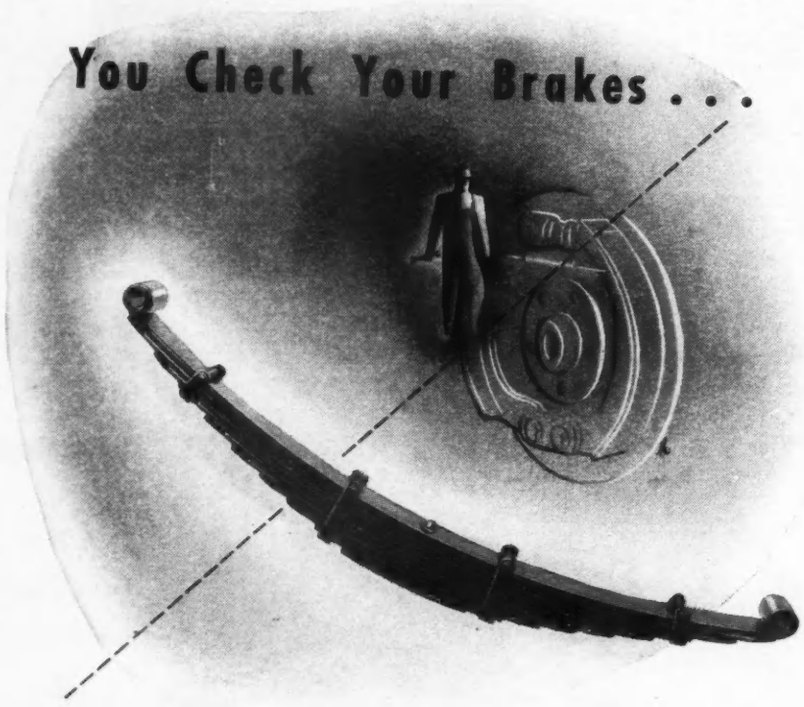
There is slowly amassing a great deal of data with regard to human fatigue under various conditions and all of this will undoubtedly concentrate itself into providing: first, a fully adjustable comfortable seat; second, a clear vision on the sides as well as the front; and third, an air conditioning system which would make it possible for the driver to be working in normal clothes regardless of the zone in which he is operating. If properly analyzed in the beginning and the evolution towards this end taken in proper strides, there is no reason to suspect that we shall be called upon to pay an inordinate price for such creature comforts that seem so eminently desirable in the vehicles of the future. Many of these same things, if the price can be held within reason, will be used as the standard regardless of the service, as they will apply to a large degree equally to the city driver as well as the over-the-road driver.

Also, there is an urgent need for designing instruments better suited than those now used. These fatigue reducing features which have been described will be and should be largely automatic with simple controls to make the necessary adjustments in seating and ventilation.

Materials

MATERIALS which we hope will be available in the future, in addition to being corrosion-proof, will have insulating properties as an in-built feature of the material itself, These features, together with non-inflammability and shock absorbing qualities, are well within the limits of the plastic field. The shape necessary for wind resistance as well as the need for maximum vision can be more readily achieved perhaps by the use of plastics. Unquestionably the

(TURN TO PAGE 154, PLEASE)

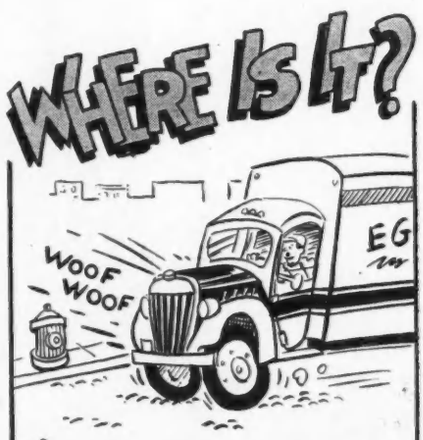


. . . but who checks your SPRINGS?

BRANCHES:
ATLANTA 3, Ga., William and Harvey Rowland, Inc., 449 Marietta St., N. W.
BIRMINGHAM 3, Ala., Birmingham Spring Service, Inc., 2017 Avenue B, South
CHICAGO 16, Ill., William and Harvey Rowland, Inc., 2732 Indiana Avenue
JACKSONVILLE 4, Fla., Jacksonville Spring & Alignment Co., 137 Jefferson St.
PHILADELPHIA 30, Pa., William and Harvey Rowland, Inc., 1414 Fairmount Ave.
PITTSBURGH 13, Pa., Point Spring Co., 419 Melwood Street

Here's a positive, definite way to cut spring costs—proved by many fleet operators. *Put your vehicles on a regular program of spring inspection.* Be sure to have this work done in a qualified shop—by a Rowland Spring Distributor. Knowing springs—how to make them deliver a full lifetime of service, what to look for that might cause premature failure and how to prevent serious trouble—is the business of Rowland Spring Distributors—and they're good at it. They have a wealth of practical experience gained over the years in working on thousands of trucks and buses. Use your nearby Rowland Spring Distributor for SPRING, muffler, universal joint and wheel suspension service. Wm. & Harvey Rowland, Inc., Frankford, Philadelphia 24, Pa.

ROWLAND SPRINGS CERTIFIED ALLOY STEEL ROWLAND SPRINGS Est. 1795 **SPRINGS • MUFFLERS • UNIVERSAL JOINTS • WHEEL SUSPENSION PARTS**



IF YOUR TRUCK STARTS BARKING, YOU MIGHT TRY LOOKING FOR THE "DOG" THAT IS LOCATED • • • •

- ☐ IN THE TRANSMISSION
- ☐ ON THE DASHBOARD
- ☐ IN THE DIFFERENTIAL
- ☐ IN THE CARBURETOR

Answer on Page 154



it's important!

It's important to the operators of heavy duty vehicles — light commercial trucks and drivers of passenger cars.

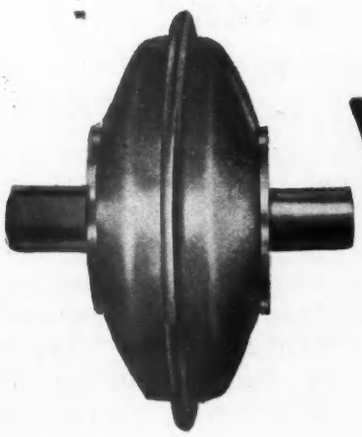
When you buy that new vehicle or have that old one reconditioned for another year or more of service, give more than passing concern to increased stopability.

Remember — in one second — at 40 miles per hour you travel 60 feet — at 50 you move ahead 75 feet.

You travel fast — so stop safely!

Vacdraulic Power Braking added to your hydraulic brakes gives feather touch, instant eye-to-pedal-to-brake action and that extra margin of safety essential to driving in congested traffic or at high speed.

Vacdraulic is easy to install and its power braking is accomplished without action lag, rods or links to get out of adjustment.



VACDRAULIC POWER BRAKING

KELSEY - HAYES WHEEL CO., DETROIT 32, MICH.
Sold to Automotive Distributors by
EMPIRE ELECTRIC BRAKE CO., Newark 7, N. J.
VACDRAULIC is a Trade Mark of Empire Electric Brake Company

TRUCKS 5 YEARS HENCE

(CONTINUED FROM PAGE 152)

development of plastics in the passenger car field will have a great influence on the possibility of this development in trucks but, the engineers in the plastic industry have a fruitful field of study with respect to the needs for the truck operator's environment. Weight-saving possibilities, of course, would also be expected in connection with all these desirable features.

The war has occasioned a great expansion in facilities as well as research in the light weight metal field and in the next few years, the light weight industry will force itself more and more into the truck picture. There is, however, need for a critical appraisal of the need for such materials in trucks and the basic cost which must be met if extensive production use is to be possible. It has long been in the premium class and in the years to come will find ready acceptance if we get around to building vehicles specifically for industry applications.

The run of mine truck users will not consciously pay any premium for light weight metal until it can be readily demonstrated that some economic gain is possible.

It is hoped that some of the things presented will be the subject of real analysis and study that will bring more clearly to the fore the need for proper appreciation of our truck transportation problems.

END

(Please resume your reading on P. 47)



WAYNE
Air Compressors

THERE'S a Wayne "Packaged Unit" to fill your Air Compressor requirements, whatever they may be. A complete line from 1.4 to 40 c.f.m. — all Wayne built, backed by Wayne's Guarantee, plus a Nation-wide Factory-Trained Service Organization. There's a service man with a complete stock of parts at more than 250 points in the U. S. A. Write today for Wayne Compressor Catalog and prices.



THE WAYNE PUMP CO., FORT WAYNE 4, INDIANA

WAYNE AIR COMPRESSORS
GASOLINE PUMPS · CAR WASHERS · AIR SCALES · REELS · LIFTS



Leon C. Hulse, formerly head of the termination department of Gar Wood Industries, Inc., has been named manager of the company's new plant at Mattoon, Ill.



Ray P. Johnson has been appointed assistant to the general manager of the Morse Chain Co., a division of Borg - Warner Corp. He will have offices in Detroit



A. C. Scott has been made president of the Geo. F. Alger Co., Detroit. Mr. Scott is a director of A.T.A. and chairman of the public relations committee of the Michigan Trucking Assn.

● WHERE IS IT?

ANSWER

(To Question on P. 152)

The sliding jaw clutch in the transmission is also known as a "dog." Shifts from one gear to the next are made by sliding the "dogs" along the mainshaft until the jaws or teeth of the dog mesh with those in the hub of the gear selected.

'TRAFFIC HAZARDS FACE FLEETS IN 1946

(CONTINUED FROM PAGE 53)

"'It is obvious," said Ned H. Dearborn, president of the National Safety Council, "that America is paying an inflationary price in human life for the privilege of indulging in a post-war traffic spree . . .

"'We may as well face the fact that traffic accidents are getting out of control. There is only one quick way to meet this emergency. It is for every driver and pedestrian to begin acting like a sensible adult, and for the drivers to quit using their war-worn cars as if they were on a kamikaze mission.

"Unfortunately, there is no magic cure-all for this traffic plague. The only sure cure is a voluntary emergency inoculation of common sense, caution and a regard for your own life and the life of the other fellow."

August Toll Up 57%

WITHIN two weeks after V-J Day on August 15, the nation's accident toll has made such a big jump that the total in traffic deaths for August was 26 per cent higher than for the same month of the previous year. The greatest concentration of this traffic spree during the beginning weeks is well indicated by the later reports from 375 of the largest American cities with populations above 10,000, which recorded a jump of 57 per cent in their August traffic deaths.

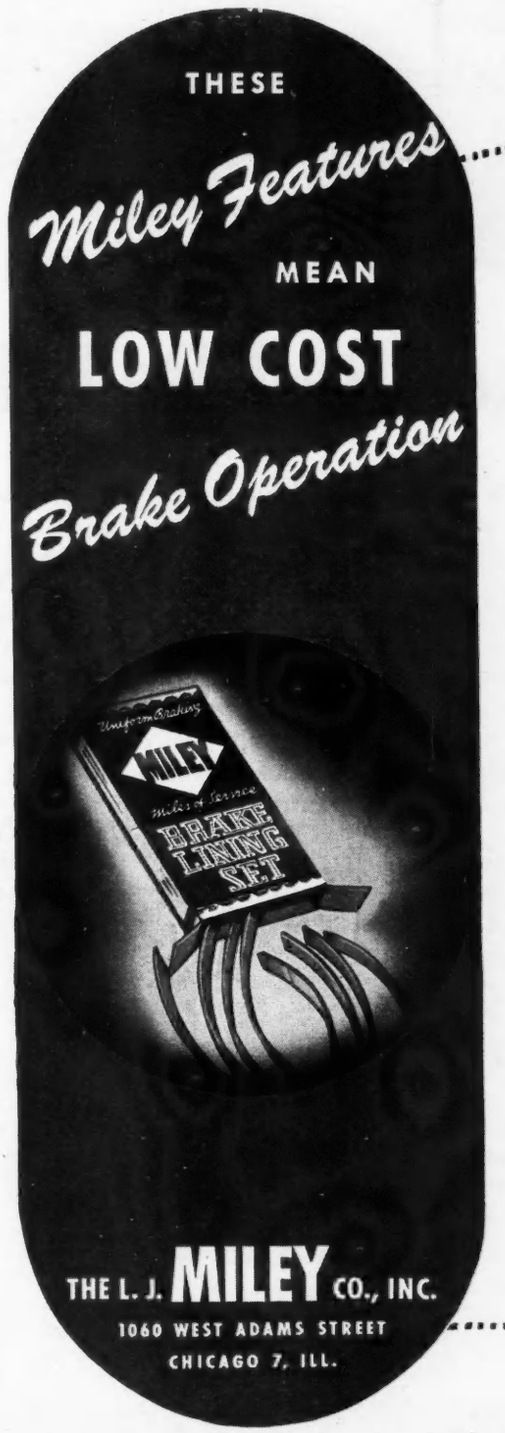
However, the accident reports soon indicated that the traffic spree had spread away from the cities to the rural highways. They show that during the last four months of 1945 motor vehicle deaths in rural areas have been about twice as great as deaths in the urban areas, as contrasted with an opposite accident picture during the same months for the previous year when the traffic deaths in rural and urban areas were about equal. This trend seems to indicate proportionately greater hazards for all over-the-road drivers of trucks.

Factors Affecting Outlook

THE increasing traffic hazard which drivers of commercial vehicles must face during 1946 has several special factors, unique in our traffic

(TURN TO PAGE 160, PLEASE)





1 Miley "Black Gold" brake linings are guaranteed NOT TO SCORE brake drums—their safe, quick-acting, soft pedal action remains CONSTANT.

2 Miley is the only brake lining manufacturer today making a complete line of brake shoes for all popular cars plus all of Ford, Chevrolet, some G.M.C. and Dodge models of trucks.

Miley is a name to remember for SAFETY, low cost operation and long mileage. Guaranteed NOT to score drums.

Write to Dept. C.

Plants in Chicago and N. Manchester, Indiana



The "Red Ball Highway" was

A lulu of a truck maintenance lesson was given when the plunging Allied armies in France outran their supply lines.

With a 300-mile high-speed haul from the supply ships, vital material went to the waiting front at a truck-a-minute rate on ceaseless, turnabout runs. That route, famed as the "Red Ball Highway," was tough on drivers—*brutal* on trucks. Men could be replaced—but not motors.

What helped those overworked engines stand the gaff? *It was oil of an entirely new type*—oil that not only lubricated superbly, but held down sludge and gum, that dispersed soot and lacquer, that forestalled bearing corrosion.

Now YOUR trucks can have that identical type of oil. For Veedol 90 H.D. also is *detergent, dispersive, and anti-corrosive.* What's more, it has the added advantages of being made from 100% Pennsylvania crudes, assuring the utmost in thermal stability with resultant less engine wear.

Try Veedol 90 H.D. in your trucks for new efficiency and lower maintenance costs, for less overhaul time and more pay miles. Veedol 90 H.D. comes in S.A.E. 10 to 50. Write or wire for details.

VEEDOL 90 HEAVY DUTY IS:

DETERGENT. Keeps engines clean by minimizing sludge and gum formations, keeps piston rings and valves free.

DISPERSIVE. Its dispersive action keeps gum and sludge as well as particles of soot in suspension—all of it is actually *drained off* with the oil.

ANTI-CORROSIVE. Has great oxidation resistance, assuring protection of the newer alloy bearings used in heavy duty vehicles.

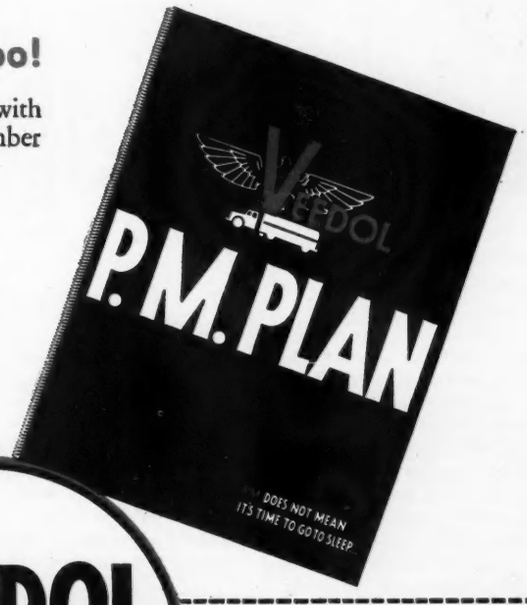
"CLEANS AS YOU DRIVE!"



a schoolroom for trucks!

Send for the Veedol P.M. Plan, too!

The Veedol Preventive Maintenance Plan, successful with over 800 fleets, can help yours. The Plan fits any number of units—costs only 18¢ per truck. Ask about it!



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TRAFFIC HAZARDS FACE FLEETS IN 1946

(CONTINUED FROM PAGE 157)

history. First, the streets and highways will become more and more crowded with a steady increase of new cars and also many new drivers, just as rapidly as the demanded millions of new passenger cars are released by manufacturers. Also, there is expected a large average mileage increase per passenger car, stimulated by the present plentiful supply of gasoline which has been improved in quality.

Still more important, a very large percentage of these passenger cars (all of the older ones) will become increasingly hazardous, from the viewpoint of operating safety. This will be due to their steadily advancing age; now averaging more than 8 years, as compared with 4½ years during normal prewar years.

Other contributing causes will be neglected maintenance and thinning tires, due to the expected limited dealer tire supplies for some time to come.

Moreover, these passenger cars will be driven by an increasing percentage of new drivers—travel-keen youths back from the war fronts and still younger home-front youths now learning to drive a family car previously little used because of the gasoline and tire restrictions.

It is also expected that these poorly-maintained and thin-tired older passenger cars, many with unskilled drivers, will be driven at considerably greater average speed. This will be due to the almost general recent speed relaxations, in many cases more liberal than ever before, and to the present extreme shortage in speed-enforcing personnel on most highway patrol routes. This speedy driving will be on streets and highways more cutup and hazardous through lack of wartime maintenance than during any period in recent years.

Accident Index

THE present hazardous situation is emphasized by the fact that recent statistics show increase in traffic accidents is running ahead of increase in traffic mileage. That is, the month-by-month traffic "death curve" has been inclining upward instead of keeping on a level, as would be if increase in accidents was directly proportionate to increase in highway mileage. For instance, for the month of October, 1945, the National Safety Council reported an increase of 28.3 per cent in highway mileage, as compared with the same month for the previous year; but, in contrast, there was a jump of 53 per cent in

(TURN TO PAGE 162, PLEASE)



Yes, in half! For actual time studies show that when trucks are cleaned *before* repairs, you *save up to 50%* of the time your mechanics normally loose wiping oil, dirt and grease from parts, tools and equipment. That saved time means *more road hours . . . more pay mileage!*

JENNY is a mighty good investment in other ways, too. For periodic JENNY Steam-Cleaning rids truck chassis of accumulated road dirt that often adds as much as 400 pounds extra weight to the load . . . makes easy detection of otherwise unnoticed damaged or worn parts permitting repairs to be made before costly road failures occur. JENNY also cleans floors, runways, greasepits, walls, windows, etc. *8 to 10 times faster . . and 100 times better . . .* than by ordinary hand methods.

WARRANT OF QUALITY

* HYPRESSURE JENNY may now be equipped with the powerful new ADJUSTA-BLAST-GUN which gives the operator instant choice of the right type of spray or amount of water required for any cleaning application. The ADJUSTA-BLAST-GUN will more than double the cleaning efficiency of any JENNY now using the old type cleaning gun. It is easy and simple to attach. Price ADJUSTA-BLAST-GUN complete, delivered $35.00.

HYPRESSURE JENNY DIVISION OF

HOMESTEAD VALVE MFG. CO.

MAKERS OF "PEAK PERFORMANCE" VALVES FOR 50 Years 1892 / 1942

P. O. BOX 90 • • • CORAOPOLIS • • • PENNSYLVANIA

● WHICH IS IT?

ANSWER

(To Question on P. 157)

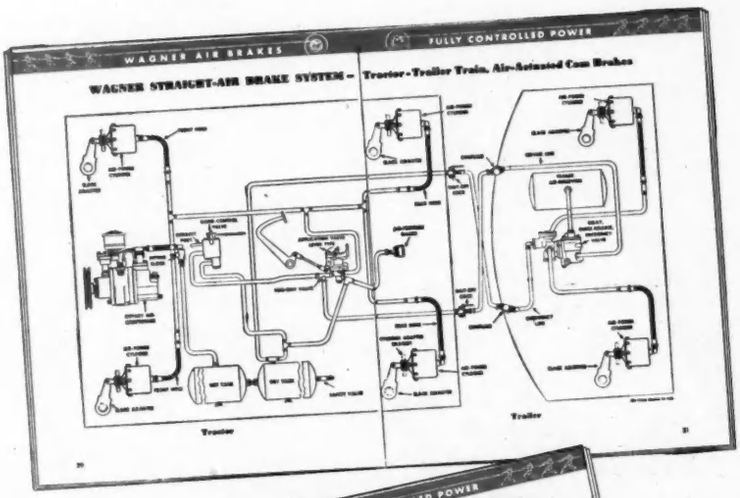
Split-skirt pistons have slots to help neutralize the expansion of metal. Aluminum pistons often have such split skirts, because the rate of expansion of aluminum is nearly twice that of cast iron or steel.

NEW WAGNER AIR BRAKE BULLETIN

This 24-page bulletin on automotive air-brakes fully describes the various types of Wagner air-brake systems. The bulletin is interestingly written and contains valuable information for anyone interested in air brakes for motor-truck or bus operation. The function and operating principles of all parts of Wagner air and air-hydraulic brake systems are thoroughly explained.

Perhaps the most interesting feature of the bulletin is the discussion on the Wagner Rotary Compressor for air-brake systems, this compressor being one of the most outstanding developments in the field of automotive air-brake equipment. Drawings and cutaway photographs clearly illustrate the rotary principle used by this new-type compressor, and complete information is given on its construction and performance characteristics.

The recent improvements made on the rotary compressor, as well as the latest design of other parts of Wagner air-brake systems, are covered in this new edition of the Wagner Air Brake Bulletin. Fill in and mail the coupon now for your free copy.





CONTENTS:

Rotary Air Compressor—what it does, how it operates, how the air is freed of oil, compressor lubrication, temperature control, inherent advantages of rotary-type compressor, cross-section drawings of compressor showing pumping cycle and nonpumping cycle. Wagner Power-Cluster—its use and advantages, cutaway drawings, graph showing ratio of air pressure to hydraulic-line pressure. Air Power Cylinders—engineering features, cross-section drawing. Air Valves—foot-operated type, hand-control type, treadle-type, lever-type, push-type, quick-release, and emergency. Slack Adjuster—Hydraulic Cam-Brake Actuater—Valves, Couplers, Switches, Gauges, Fittings, Reservoir, Etc.—Schematic Diagrams of Wagner Air-Hydraulic Brake System for commercial vehicles equipped with internal hydraulic brakes, Wagner Straight-Air Brake System for commercial vehicles equipped with cam brakes, Wagner Air-Hydraulic Brake System for tractor-trailer train, and Wagner Straight-Air Brake System for tractor-trailer train, air-actuated cam brakes.



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St. Louis 14, Missouri

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Wagner

LOCKHEED HYDRAULIC BRAKE PARTS and FLUID . . . NoRoL . . . CoMoX BRAKE LINING . . . AIR BRAKES . . . TACHOGRAPHS . . . ELECTRIC MOTORS . . . TRANSFORMERS . . . INDUSTRIAL BRAKES

TRAFFIC HAZARDS FACE FLEETS IN 1946

(CONTINUED FROM PAGE 160)

traffic accidents. Likewise, traffic accidents went up 40 per cent in November and an estimated 37 per cent in December.

In the total, the nation's traffic toll for 1945 has been estimated at 29,000 persons killed and more than a million injured. This is an increase of almost 20 per cent over the previous year; and most of this increase, of course, was during the final 4½ months of the year following V-J Day.

The assumption that the hazard from motor vehicle traffic will steadily increase during 1946 is based in part on the rather general opinion among traffic experts that motor vehicle travel in the United States probably will double during the next 15 years; that is, by the year 1960.



Truck Accident Data Incomplete

IT IS unfortunate that national accident statistics do not yet afford a detailed picture of the kinds of accidents happening to commercial vehicles. Also statistics do not indicate the total mileage of trucks and other commercial vehicles as compared with passenger cars. Hence, it is not possible to compare fairly the accident rates of trucks, versus passenger cars.

The latest and most complete annual traffic accident tabulation now available is the National Safety Council estimate for the year 1944, based on reports from traffic authorities in 53 states. During this latest statistical year there were 24,300 deaths from motor vehicles and about 850,000 additional injuries, representing an estimated economic loss of $1,250,000,000.

Truck Fatalities

TWENTY-SIX per cent of these deaths (6900) were charged to trucks, three per cent to buses, two per cent to motorcycles, one per cent to taxis, and 68 per cent to passenger cars. This makes the percentage of accidents charged to trucks seem especially high, since for 1944 only about 15 per cent of all registered motor vehicles were trucks; however, the average annual mileage per trucks undoubtedly was much higher than the average for passenger cars.

As to the 850,000 non-fatal accidents, trucks were charged with only 16 per cent, as contrasted with 78 per cent for passenger cars. This indicates that a considerably larger percentage of all the truck accidents were in the fatal class, as compared with passenger cars.

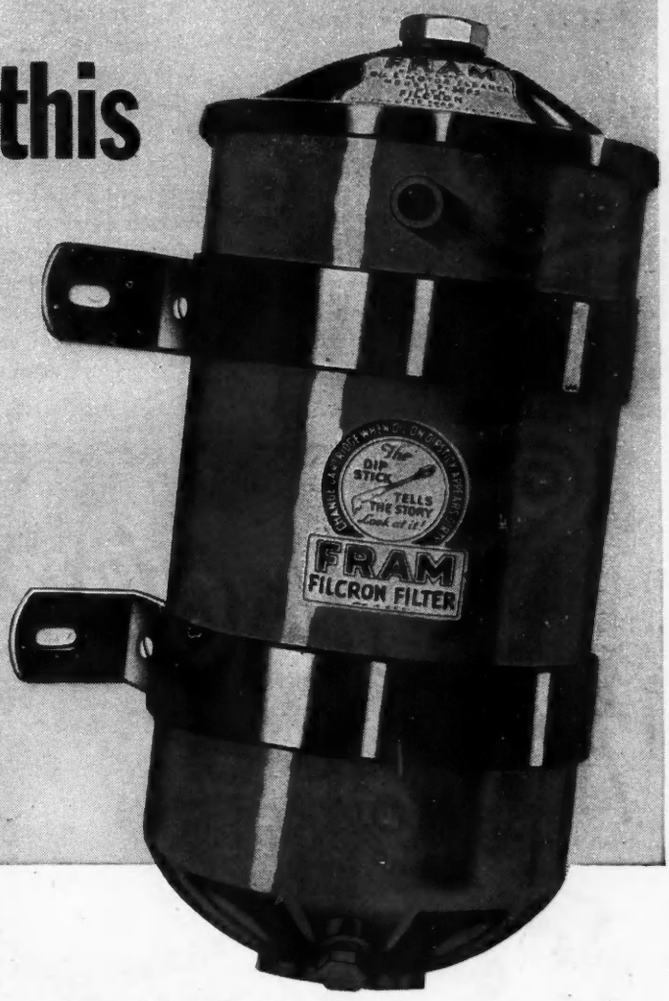
Causes Reported

AS TO the mechanical condition of the vehicles at the time of their accidents, the national report is still more deficient, since only about one-third of reports recorded type of accident. Such as they were, the reports indicate no defects for 88 per cent of the vehicles involved in fatal accidents and for 94 per cent of vehicles involved in all accidents.

Defective brakes were charged to four per cent of the vehicles in fatal accidents and to two per cent of those in nonfatal accidents. The other most frequently charged defects were im-

(TURN TO PAGE 164, PLEASE)

No "Buts" about this Amazing New Oil Filter . . .



You've heard it said often, no doubt, "Oil Filters are all right, *but* . . ." Now it's time you got acquainted with the oil filter that ends all "buts"—the new Fram Filcron Oil & Motor Cleaner, which contains that amazing new filtering element, the Fram Filcron cartridge. Tested and proved in world-wide service with both Army and Navy, it offers these advantages:



1. Micronic Filtration: The new Fram Filcron filter and cartridge make possible "micronic filtration," the trapping of abrasive particles as small as one micron (.000039 of an inch) in size. This keeps oil physically, *visually* clean, reduces engine wear to a minimum, saves overhauls, repairs, money. Filcron cartridges are available to fit any Fram filter, present or prewar.



2. Greater Efficiency: Fram Filcron filter and cartridge have a higher clean oil flow rate, and oil is cleaned at one pass.



3. Advanced Design: Bodies and covers of the new Fram Filcron filters are made of heavy, one-piece pressed steel, solidly built to give years of service. New reinforced bottom greatly increases strength. Drain and inlet spuds insure leak-proof connections. The new Fram Filcron cartridge has pull out bale attached to bottom plate.

4. Long Life: Greater dirt capacity means longer cartridge life, thus reducing operating costs.



5. Proven Superiority: Developed for the Armed Services, millions of Filcron cartridges have proved their outstanding qualities with the Army on the battlefields of the world and with the Navy on every ocean.

6. Money-Back Guarantee: Try the new Fram Filcron filters and the Fram Filcron cartridges on your fleet. You won't risk a penny, because if, within 90 days, you feel you can afford to operate without Fram, your money will be cheerfully refunded. *Ask your distributor about the new Fram Filcrons today!* Fram Corporation, Providence 16, R. I. *In Canada:* J. C. Adams Co., Ltd., Toronto.



HOW'S YOUR OIL FILTER? *The Dipstick Tells the Story!*

FRAM *Filcron*

THE MODERN OIL FILTER

TRAFFIC HAZARDS FACE FLEETS IN 1946

(CONTINUED FROM PAGE 162)

proper lights, blowout of defective tires, and defective steering mechanism.

Driver Violations

THESE tabulations imply, of course, that driver violation must have been involved in a much larger percentage of all the accidents. This is officially confirmed by a tabulation based on reports of state and city traffic authorities from 27 states, which charges law violations against 57 per cent of all drivers involved in fatal accidents and against 53 per cent in all accidents.

Likewise, 69 per cent of fatal accidents, and 83 per cent of all accidents involved a driver violation. The most common violation in fatal accidents was excessive speed, representing 16 per cent of the total in cities and 29 per cent in rural areas.

The second most common violation in both fatal and non-fatal accidents was "on wrong side of road" (3 per cent in cities and 10 per cent in rural areas).

The third most common fatal accident violation (15 per cent in cities and 5 per cent in rural areas) was "did not have right of way"; and for "all accidents" this was the No. 1 violation (10 per cent).

The fourth most common fatal accident violation was "under influence of alcohol" (4 per cent in cities and 7 per cent in rural areas). However, this factor is enlarged upon by the National Safety Council as follows: "State reports show that 17 per cent of all drivers involved in fatal accidents had been drinking and that 20 per cent of all adult pedestrians killed had been drinking . . . 'Drinking driver' and 'asleep' accidents are disproportionately high during hours of darkness. Almost half of all motor vehicle accidents are between 6 p.m. and 6 a.m., but three-fourths of both drinking and driver-asleep accidents occur during this 12-hour period."

Other important violations, in order of greatest frequency, in fatal accidents were: "disregarded warning sign," "improper passing," "disregarded stop sign," "improper parking," "improper starting," "following too closely," "improper turning," "disregarded signal officer."

In the total, drivers were reported violating law in seven out of 10 fatal accidents. One out of 12 drivers involved in fatal accidents had some handicap, and in more than half of these accident cases the drivers were either fatigued or asleep. In one out of every five fatal accidents, the vision of the driver was obscured, and in 40 per cent of these cases the obscurement was on the vehicle itself, such as rain, snow or sleet.

Safety Contest Reports

REPORTS from the 1198 fleets with 83,323 vehicles enrolled for the month of October, 1945, in the National Fleet Safety Contest of the National Safety Council reflect the increasing driving hazards. For instance, the accident rate for all fleets during October, 1945, was 24 per cent higher than for October of the previous year. The accident rate for the four-month period since the start of the contest on July 1, 1945, was up

(TURN TO PAGE 168, PLEASE)



with Rayon Cord

THERE'S NO COMPROMISE with safety in school buses. That's why more and more of them are being equipped with rayon cord tires . . . to take advantage of rayon's added protection against tire bruising and cutting and resultant tire failure.

Rayon's phenomenal record in tires was clearly forecast when the Army gave it exhaustive proving ground tests. These tests showed that under conditions of sustained heat and operation tires made with rayon cord averaged far better . . . and that the same was true on rough terrain where bruising and cutting were the main problems.*

These findings have since been confirmed many times over in both military and commercial use. Today, commercial truck and bus companies use rayon cord tires in ever greater numbers . . . for both long and short haul service . . . find them safer because they're stronger, cooler running, more heat-resistant. This means fewer road delays, higher running speeds where desirable, lower operating costs, fewer maintenance problems, and longer tire life.

*Source of data: *Hearings before a Special Committee Investigating the National Defense Program, United States Senate — Seventy-eighth Congress, First and Second Sessions.*

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Offices: 350 Fifth Avenue, New York 1, N. Y.; Charlotte, N. C.; Philadelphia, Pa.; Providence, R. I.; Washington, D. C.; Wilmington, Del.

Our free booklet, "The Record of Rayon Cord in Tires," gives dozens of interesting facts about rayon cord that make clear its importance in tires of today and tomorrow. Order your copy now. Just clip and fill in the coupon.



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Please forward without obligation or cost to me a copy of "The Record of Rayon Cord in Tires."

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TRAFFIC HAZARDS FACE FLEETS IN 1946

(CONTINUED FROM PAGE 164)

11 per cent, as compared with the like period for the previous year.

Among the 16 distinct trucking groups with 830 fleets and 53,509 vehicles in the contest, only three of the fleets escaped substantial increases in their accident rates during the first four months of the annual contest, as compared with the same months of the previous year. These were: Bakeries, no change; Petroleum, West-South Central & Mountain States, a drop of 29 per cent; and Wholesale, a drop of 22 per cent.

In contrast, the four groups which registered the greatest increases in accidents were operating chiefly in city zones where the first-stage of the postwar driving spree was most noticeable. These were: Beverages & Ice Cream, up 76 per cent; For-Hire City Trucking, up 54 per cent; Retail Stores, up 21 per cent; and Newspapers, up 17 per cent.

It may be significant also, as related to the postwar accident trends and effects on different kinds of trucking, to note the comparative accident rates per 100,000 vehicle miles for all of these 15 different trucking groups during the four postwar months from July to October inclusive: Private Intercity Trucking, .52; Petroleum—West, South, Central & Mountain States, .56; Petroleum—all others, 1.65; Private City Trucking, .89; Public Utilities, 1.46; Wholesale, 1.54; Beverages & Ice Cream, 2.00; For-Hire Inter-City Trucking, 2.36; Bakeries, 2.50; Laundries, 2.62; Dairies, 3.06; Newspapers, 5.50; Coal & Ice, 6.05; Retail Stores, 6.61; For-Hire City Trucking, 13.41.

New Accident Report Form

IN the future, this National Fleet Safety Contest will be able to report more detailed information on kinds of accidents occurring because of the recent adoption of a new accident report form. Each fleet operator in the Contest now is asked to supplement each regular monthly accident report with a more detailed check analysis on the first five reportable accidents which occurred during that month. It is assumed that such selections will represent fair samplings of all the accidents of all the member fleets.

The Contest rules provide that: "A reportable accident shall be any accident in which the contestant's vehicle is involved, unless properly parked, where such accident results in death, personal injury, or property damage. An accident is reportable regardless of who was hurt, what property was damaged or to what extent, where it occurred, or who was responsible."

The report requires that, for each of the first five accidents, records be made in accordance with the following seven-point chart, so printed that all the required checking may be accomplished quickly through use of handy check squares:

I. Check or write in, what your vehicle collided with (or what was involved in the accident): A. Other motor vehicle or vehicles ..... B. Pedestrian ..... C. Other—specify (train, post, etc.) .....

II. Involved injury or death .....

(TURN TO PAGE 170, PLEASE)



He found the Answer . . .

ALEXANDER GRAHAM BELL, inventor of the telephone, experimented for years in the endeavor to transmit the human voice by wire. On October 9, 1876, success crowned his efforts when he and Thomas A. Watson held the first telephone conversation—over a crude two-mile line between Boston and Cambridgeport.

Bell at last had found the answer to his problem in an electro-magnetic instrument that duplicated sound vibrations at a distant point.



You will find the answer to every Carburetor and Fuel Pump repair problem in Hygrade Contain-All Kits. All the necessary parts for a quick, easy reconditioning job. Satisfactory results assured—because they're "Engineered for Old Units."

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FUEL LINES AND FITTINGS

From your jobber. Write us for particulars.

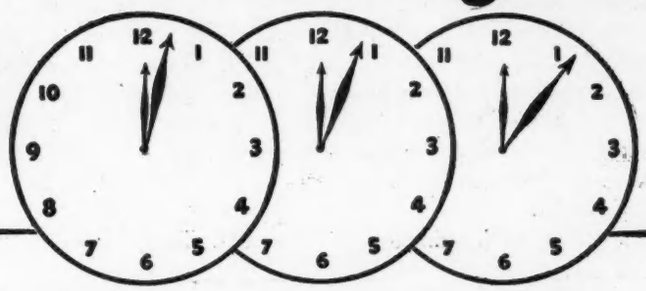
HYGRADE PRODUCTS CO., INC.
35-35 Thirty-fifth St., Long Island City 1, N. Y.

Carburetor and Fuel Pump Parts by HYGRADE

ENGINEERED FOR OLD UNITS

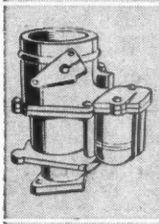
Hygrade Line AUTOMOTIVE PRODUCTS

How to Cut Metal Cleaning Time to MINUTES



NEW, FAST-ACTION DETERGENT CLEANS FERROUS AND NON-FERROUS METALS...Easy to Handle

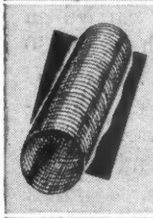
TYPICAL USES FOR Solvent "26"



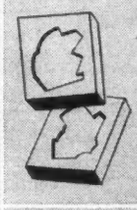
CARBURETORS—Solvent "26" removes gum, gasolene sediment and other accumulations of dirt.



SPARK PLUGS—Solvent "26" safely cleans porcelain; helps loosen carbon deposits.



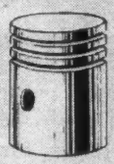
METAL PLATES AND SCREENS—Solvent "26" restores clear, clean finish to any metal surface.



DIES AND STAMPING—Solvent "26" removes drawing compounds from die-formed or stamped metal.



LABORATORY EQUIPMENT—Solvent "26" frees glass and metal tubing and their supports of gums, varnishes and other incrustations or deposits.



PISTONS—Removes lacquers, gums, resins, etc. from gas, gasolene and diesel engine pistons and rings. Also effective for cleaning all parts of dismantled motors, engines and machinery.

REMOVES:

Oil • Grease • Gums • Varnishes • Lacquers • Paints
Carbonaceous Deposits • Asphaltic Products

FROM:

Steel • Cast Iron • Aluminum • Porcelain • China
Chrome and Nickel Plate • Stone • Precious Metals
Brass • Washable Fabrics

Used throughout the war in critical industry as a superior cleaning agent, newly-developed SOLVENT "26" is now available for all industrial needs.

Offering many advantages in time, labor and cost over other present cleaning methods . . . Solvent "26" is so effective a detergent it can be used at *ordinary* room temperatures.

The fast action of Solvent "26" reduces cleaning time from hours to minutes on dismantled engine parts and all kinds of machinery. Simply dip, rub, brush or spray it on. Then flush clean with hot water.

Mail the coupon today for literature and information leading to a demonstration of this unique product in your own plant.

CITIES SERVICE OIL COMPANY
ARKANSAS FUEL OIL COMPANY

CITIES SERVICE OILS — ONCE-ALWAYS

Cities Service Oil Company
Room 610
70 Pine Street
New York 5, N. Y.

Gentlemen: I am interested in a demonstration of Solvent "26"—at no cost or obligation.

Name.....

Title.....

Company.....

Address.....

City.....State.....

TRAFFIC HAZARDS FACE FLEETS IN 1946

(CONTINUED FROM PAGE 168)

III. A. Intersection accident ..... B. On private property ..... C. Non-intersection accident .....

IV. For two-vehicle collision, check movement of vehicles immediately before accident. A. Opposite direction ..... B. At any angle ..... C. Same direction .....

V. Direction of each vehicle (immediately before accident) (to be checked both for "Your" and "Other"): A. Backing ..... B. Right turn (or curve in road) ..... C. Left turn (or curve in road) ..... D. Going straight forward .....

VI. Check motion (both your & other vehicle involved): A. Moving (in motion) ..... B. Improperly parked ..... C. Properly parked ..... D. Stopped (but not parked) .....

VII. Check (for both "Your" and "Other") if vehicles were: A. Passing or pulling around ..... B. Entering or leaving: 1. Parked position ..... 2. Driveway or alley ..... C. Making "U" turn ..... D. Avoiding something (but not one of the vehicles involved) .....

More Effective Safety Training

TOWARD meeting the national emergency, which the steady increase in traffic accidents represents, there have been developed several related activities with the double-barrelled objectives of: (1) More effective safety training of fleet supervisors, and (2) safety training of drivers.

The first-mentioned of these objectives includes a nation-wide program being sponsored by the National Committee for Motor Vehicle Fleet Supervisor Training, which represents the following organizations: American Automobile Assn., American Mutual Alliance, American Trucking Associations, Automobile Manufacturers Assn., Automotive Safety Foundation, Center for Safety Education, Institute of Public Safety, National Assn. of Motor Bus Operators, National Conservation Bureau, National Council of Private Motor Truck Owners, National Highway Users Conference, and National Safety Council.

This program is being carried on through cooperation with about 30 different colleges and universities from coast to coast. It is a demonstration and study course, usually limited to 40 students and usually continuing for four days, to afford practical training for fleet supervisors and directors of safety, personnel and training. Special attention is given to methods of selecting, training and supervising drivers. At some of the schools this course has been repeated for five or six consecutive years.

There is also considerable national activity in safety training of individual motor fleet drivers. The National Safety Council, as one example, recently has been giving proportionately much more attention to safety educational material specifically for the driver. This includes vehicle safety dash cards changed every week, a monthly pocket-size driver safety magazine, a safety letter mailed each month to the driver's

(TURN TO PAGE 172, PLEASE)





USE CHRYSLER CORPORATION PARTS DIVISION

MOPAR

TRADE MARK

PARTS AND ACCESSORIES

FACTORY ENGINEERED AND INSPECTED

FOR

Plymouth

DODGE

DeSoto

CHRYSLER

DODGE Job-Rated TRUCKS

"Q" stands for "Quality" in every Chrysler Corporation engineer's dictionary. It is his creed to make sure that every part used for factory installation or for replacement measures up to exacting quality standards.

This "Q" man is using polarized light to "see through steel" . . . locating points of stress to make sure that a part will give an extra measure of long, dependable service. Hundreds of such tests are included in the engineering leadership at work for you . . . enabling you to rely upon MOPAR Parts for customer satisfaction and good will.

NOTE TO ALL REPAIR SHOPS

If you need parts of any kind for a Plymouth, Dodge, De Soto, or Chrysler, obtain them from a dealer for these vehicles.

REMEMBER! . . . on Thursday nights it's "The Music of Andre Kostelanetz" . . . music millions love . . . plus famous guest stars—every Thursday, C.B.S., 9 P.M., E.T.

CHRYSLER CORPORATION — PARTS DIVISION, DETROIT 31, MICHIGAN

TRAFFIC HAZARDS FACE FLEETS IN 1946

(CONTINUED FROM PAGE 170)

home address, and highly prized Safe Driver Awards given for "meritorious performance." To qualify for an Award the driver must have completed at least 12 consecutive months of operation without a preventable accident.

"Defensive Driving"

TO aid such an achievement there is training in "defensive driving." A defensive driver is defined as "one who is careful to commit no driving errors himself, who makes allowance for the lack of skill or improper attitude on the part of the other fellow, and who does not allow hazards of weather and road conditions or the actions of pedestrians and other drivers to involve him in an accident.

"He keeps continually on the alert, recognizes an accident-producing situation far enough in advance to apply the necessary preventive action and concedes the right of way when necessary to prevent an accident."

War Casualties Not as Great

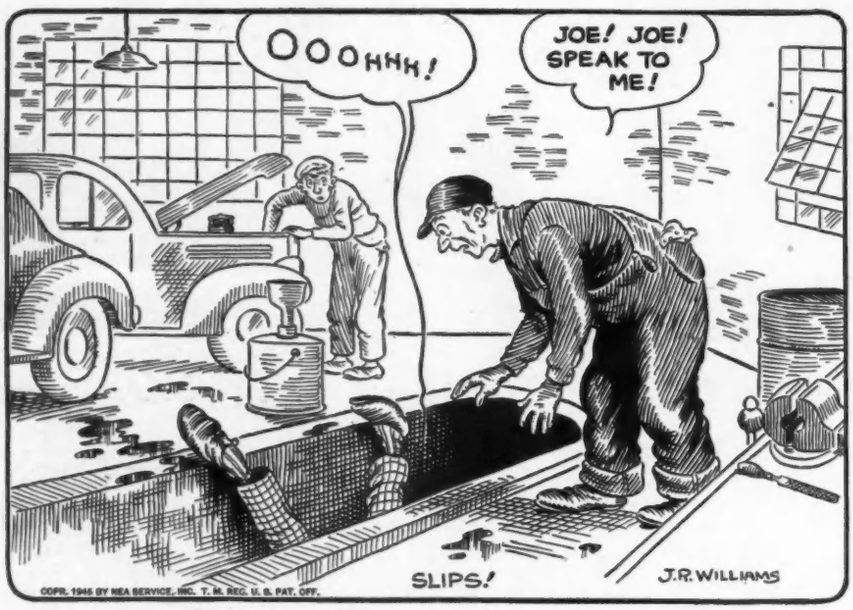
THE immense importance of the national problem involved in the control of the present alarming upswing in traffic accidents can be appreciated only by comparing the recent injury hazards on our streets and highways with the hazards from the recent World War—and then remembering that during the postwar years just ahead there is certain to be a vast increase in motor vehicle traffic.

It has been reported that during the four-year period between Pearl Harbor and V-J Day there were 1,072,524 casualties among American military personnel—killed, wounded, missing, and prisoners. In contrast, the National Safety Council reports that during the same period a total of 94,000 persons were killed on our streets and highways, 3,300,000 more were seriously injured, and 1,250,000 of those injured received permanent disabilities.

END

(Please resume your reading on P. 54)

OUT OUR WAY



Above is a portrait of a mechanic, deciding to take up some other business, when, as, and if he gets out of the hospital.

With SOL-SPEEDI-DRI, you can end the dirty, dangerous accumulations of oil and grease on the floors around your shop, garage, gas station, truck or bus terminals.

SOL-SPEEDI-DRI is easy to use and inexpensive. It cuts down accidents, falls, and the dangers of fast-spreading fire . . . it works while you work safely.

SOL-SPEEDI-DRI, white, dry and granular, is oil-thirsty, absorbs oil just as a blotter does ink. Spread a carpet of it, wherever oil and grease accumulate and you immediately have a white, non-skid surface. Sweep it up, and the floor will be clean, dry, and safe. No more mess, no more slipping, no more back-breaking floor-cleaning jobs.

Write your name and address on the margin of this page for a Free Sample and complete details.

SUPPLIERS: East—Safety & Maintenance Co., Inc., New York 1, N. Y.
South, Midwest & West Coast—Waverly Petroleum Products Co., Philadelphia 6, Pa.

SOL·SPEEDI·DRI
OIL AND GREASE ABSORBENT



W. H. Hammond, new vice president in charge of sales of Gar Wood Industries, Inc., Detroit, Mich.



New evidence of the chemical resistance of Plexiglas is given by the successful use of this acrylic plastic for transparent parts exposed to hydrofluoric acid vapor. The glass window which the worker at left is holding is badly etched by two weeks' service in a dump truck handling sludge. The Plexiglas windshield is still clear after the year's service. Laboratory tests show that Plexiglas is not affected by 24 hours' immersion in hydrofluoric acid in concentrations less than 20 per cent by weight.

1946 VANETTE

(CONTINUED FROM PAGE 80)

city and surburban deliveries. The "Close-Coupled" has the added maneuverability of a shorter wheelbase or ease in handling in congested city traffic and parking in confined spaces.

Bodies are of all steel construction, and both top and sidewalls are fully lined and thoroughly insulated. Elimination of plywood and the development of a new scientific method of sealing prevents moisture, dust and dirt from entering the body walls. The smooth interior lining and lack of door pockets permit maximum utilization of load space.

AMONG the engineering improvements are new steering and pedal arrangements, with design approved by the Ford Motor Co., and more rugged cross sills which are 50 per cent stronger than previously.

New, wider, more comfortable driver seating, unobstructed vision, and smooth, easy riding qualities resulting from scientific distribution of weight, contribute to less driver fatigue and consequent delivery efficiency.

In addition to the three Vanette models, the E-Z Route delivery unit is also being readied for production. Answering the special needs of creameries and bakeries for maximum efficiency on house-to-house deliveries, the all-steel E-Z Route body is built on the Ford "tonner" chassis.

As always, Vanettes and E-Z Routes will be built on Ford truck chassis only and will be sold nationally by Ford dealers exclusively.

END

(Please resume your reading on P. 82)



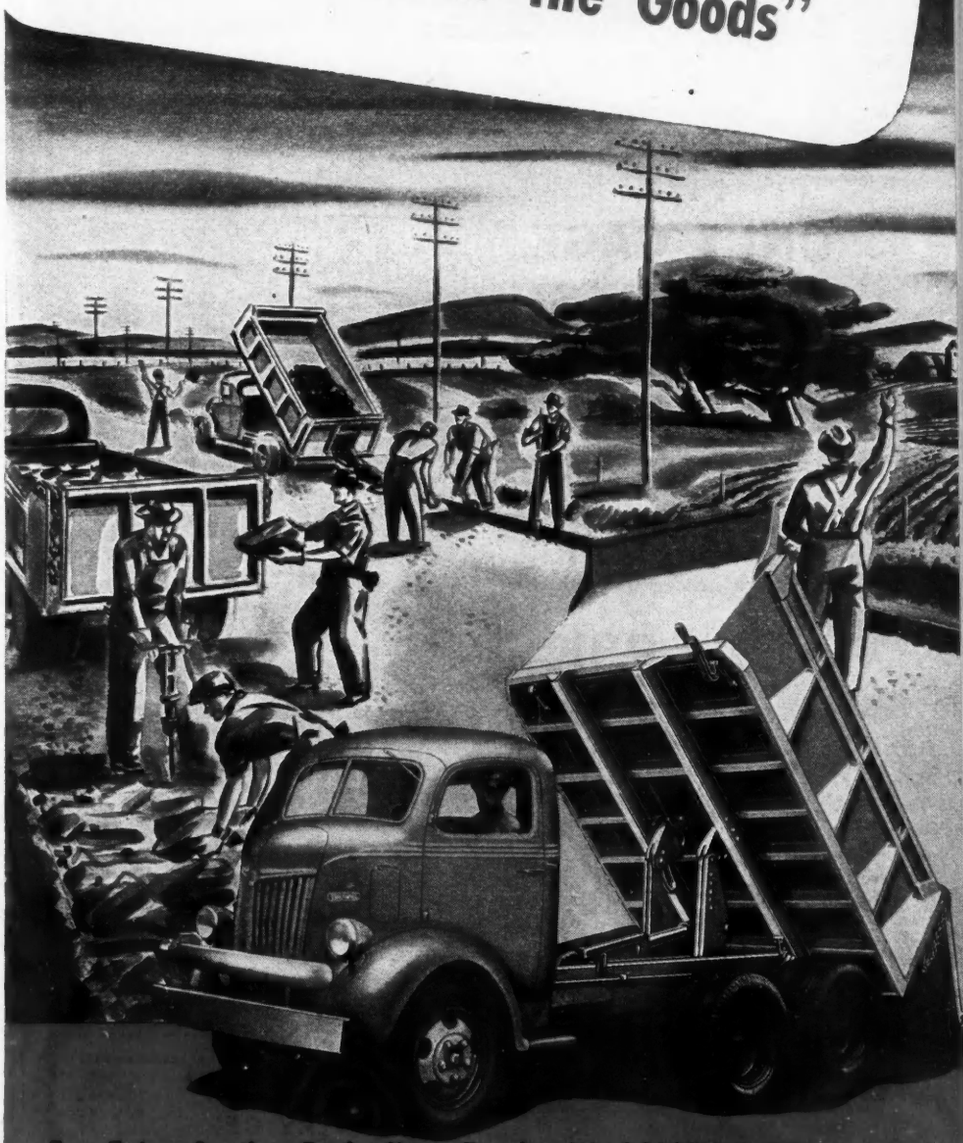
William Day, chief metallurgist of Mack Trucks, explains function of a wear-test machine to group of attendants at Mack's first sales institute since the war started at the company's New Brunswick, N. J., plant. Headquarters for the 20-day term are at Allentown, Pa.

For Highway Repairs and Construction, Operators know

GALION

HYDRAULIC DUMP BODIES

Always "Deliver the Goods"



For Extra Service Equip Your Truck with GALION Hoists and Bodies

THE GALION ALLSTEEL BODY CO. • Galion, Ohio

COIL SPRING SUSPENSION

(CONTINUED FROM PAGE 82)

means of a wedge action. After thus resisting the action, they return to their normal position by an inner coil spring and are ready to act again.

The frequency snubber is entirely self-lubricating and requires no service attention. A half million miles is said to be the usual service before replacement is required. This spring and snubber assembly made it possible to capitalize upon the weight reduction advantages and easy riding qualities inherent in the coil spring.

Main Spring Weighs 15 Lb.

ONE major item in weight reduction is the main coil spring itself which weighs only 15 lb. The other is elimination of all leaf spring accessories like multiple shackles, spring clips, tie-bolts, U-bolts, radius rods, torque arms, compressions bars.

One trailer firm reported an increased payload to the extent of $2152.80 a year on a trailer changed over a Feather Ride tandem suspension. This is net profit, as no additional fuel, drivers or handling is required.

In contrast to the leaf spring deflection of from 2 in. to 2½ in., the coil spring is said to provide greater stability—less side sway and better control of vehicle results. The entire travel allowable in the main coil spring is only 2 in. At rated capacity, figured at 17,000 lb. per axle (34,000 lb. on tandem assembly) the springs are designed to deflect 40 per cent or only 8-10 in. Under the force of impact, road shock and centrifugal force, the springs work only another ¼ to ½ in.

No Axle Kick-Up

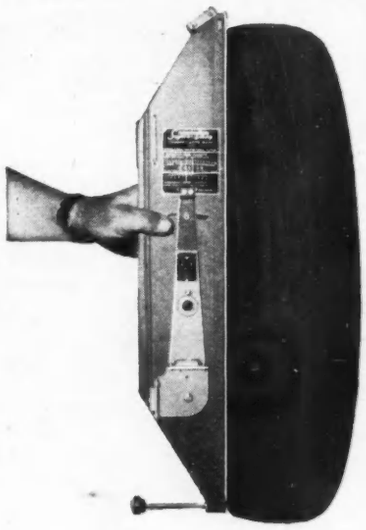
Of special interest is the manner in which the Feather Ride tandem suspension converts the force of momentum into additional tractive effort between the tires and the ground, just reversing the tendency of the load to "pole vault" over the suspension. As can be seen in Fig. 1, the load is suspended in front of axle center line of each axle on what, in effect, is a bell crank.

The design of these bell cranks is such that 25 per cent of the load is carried by the front bracket and 75 per cent by the rear bracket. This reduces the loading on the spring member to 75 per cent of the actual load. The springs at the rear provide a cushion between the frame and axles at both points since the trunnion is arranged to float and carries no load. The load imposed on the frame is distributed equally between the two axles.

Upon application of the brakes each axle twists the bell cranks in a rotary motion exerting a real and definite effort to pull downward at the point where bell crank is attached to the frame. The greater the speed, the greater the load, momentum or brake application, the greater is the Kinetic energy available and the greater becomes the downward pull. In fact the "settling" of the load can be seen upon severe application of the brakes under a Feather Ride tandem suspension. This ability to make fast emergency stops without tire hopping is a considerable tire saver and safety factor.

(TURN TO PAGE 178, PLEASE)

New Super-Easy
CAMBER-CASTER GAGE
(PATENTED)



THE ONLY GAGE THAT HAS A BUILT-IN FLOOR SLOPE COMPENSATOR

LOW-PRICED

Handiest camber-caster gage ever invented. Designed for the mechanic who wants a simple, inexpensive device for doing the job quickly and accurately.

The only gage that has a built-in floor slope compensator. (Patented.) Once the gage is set to the floor slope, the slope is automatically compensated for in all readings.

DOES THE JOB IN ⅓ THE TIME

FASTER
Checks floor slope and one wheel for CAMBER in 30 seconds.
Checks floor slope, CASTER and CAMBER on both wheels in 3 minutes.

LIGHTER
Weighs only 3 lbs.

SMALLER
Only 24 inches long

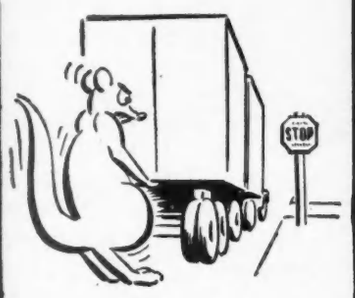
MORE ACCURATE
Automatically compensates for floor slope

Write for Literature

MICRO-LINOR SERVICE CORP'N
1621 W. Fort St. Detroit 16, Mich.

F R

Has Everything!



STOPS WITHOUT HOP
Energy of "load in motion" is channeled to ALL tires. Positively *no* axle kick-up.



AUTOMATIC STEERING
Axles yield to arc of curve. Eases tire scuffing. Easier pulling on grades.



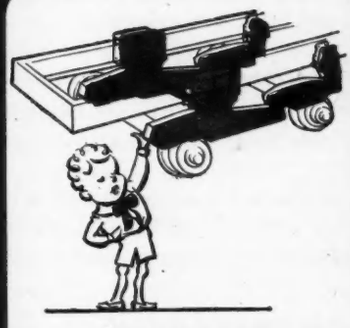
NO LUBRICATION
Rubber mounts and bushings. No more breakdowns due to lubrication neglect!



FREQUENCY SNUBBERS
Smothers "bounce" to deliver a soft, controlled ride for all loads from light to heavy.



UNDERLOAD SPRINGS
A cushioned ride for empties and light loads. Eliminates major cause of tanker leaks, body breaks.



LIGHT WEIGHT
Trim design—no gadgets. Less tare weight; hundreds of pounds more pay load. Increase *your* profits!

Insist **ON FEATHER RIDE**
FOR YOUR PRESENT TRAILERS
FOR YOUR NEW TRAILERS

THE BIGGEST NEWS IN TRAILER HISTORY!



TANDEM AND SINGLE AXLE SUSPENSIONS • AXLES
BRAKES • FIFTH WHEELS • FULL TRAILER DOLLIES

COPR. 1945—FEATHER RIDE, INC.

Here it is . . .

NEW, SURE WAY to Find LEAKS in Tubes! . . .



BISHMAN TUBE DUNKER

NO. 820—AIR-POWERED—ROTATING

Here's what you've wanted for a long time—an EASY, QUICK and SURE way to locate ALL leaks in ALL tubes up to 50" diam., including SYNTHETIC tubes. It will avoid missing leaks—will save time, labor and critical tire mileage.

It submerges an inflated tube COMPLETELY, in a few seconds, holds it steady under water in a level horizontal position, fully visible, with equal air pressure throughout the tube—no bulges! Tube easily rotated in the water for close inspection of any part. Handy built-in light. No need to keep hands in water Two front submerging arms are moveable to permit inserting or removing tube.

AIR-POWER Cylinder operated from your regular air sup ply. With minimum amount of air, it develops pushing power to submerge a big tube. One lever operation—move to right to lower submerging arms, move to center to stop arms at desired point, move to left to raise arms.

Comes Complete with 52" diameter 20 gauge Steel Tank, or without tank. Quickly attached with 3 bolts to any tank from 40" to 52" diameter—adjustable frame and arms. Clamps fit rolled or angle rims on tank. Tank held steady at all times.

Pays for itself in time and labor saved, in avoiding duplication of work and tube damage.

ASK YOUR JOBBER or WRITE FOR DETAILS

BISHMAN MFG. CO., 1101 SOUTH 2ND ST., MINNEAPOLIS 15, MINN.

BISHMAN



COIL SPRING SUSPENSION

(CONTINUED FROM PAGE 176)

Other Features

THE elimination of all need for lubrication is possible because the Feather Ride suspension is completely rubber bushed and mounted.

The rubber mounting makes an easier pull possible because it allows the axles to "give" sideways under the frame and to conform to the arc of curves. The axles thus conform to a position where they trail easiest. After the curve has been passed, they return to their normal trailing position, in relation to the kingpin and the frame.

Overloads bring about many vexing problems for the fleet operator. All this could be avoided if the operator had a dependable gage by which he could closely approximate his load limitation. Short loads would be avoided as well. On the Feather Ride dust cover is a simple load indicator that is standard equipment on all Feather Ride suspensions.

END

(Please resume your reading on P. 84)

TRUCK DEPRECIATION

(CONTINUED FROM PAGE 63)

Hard to Reconcile Wear-Outs

WE OFTEN hear the expression used, "the equipment is worn-out and should, therefore, be replaced." It is rather difficult to reconcile a "worn-out" piece of equipment in the light of an effective preventive maintenance program.

Admittedly, there is often the tendency to keep equipment in operation by running repairs alone; i.e., repairs are made only at such times as trouble occurs. Then when the body or cab reach a point where the equipment is no longer presentable, when the gears become noisy, and you can literally spin the steering wheel before it takes hold, it is considered worn-out and time to retire it.

However, long before this point the equipment has ceased to be safe on the highway. Where the point of wear-out is, we do not know, for even on our million-mile equipment, we have changed assemblies such as engines and other units many times due to normal wear, but the trucks as mentioned before is in as safe operating condition as in 1933, and cannot, therefore, be classed as worn-out.

END

(Please resume your reading on P. 65)



Model M6-15B
(Illustrated above)

This is the *newest* winch in the BRADEN line. It has a rated capacity of 12,000 lbs., and is already a recognized leader in the power winch field.

The M6-15B is equipped with the new OIL-COOLED, FULLY ADJUSTABLE, AUTOMATIC *Safety* BRAKE which keeps a suspended load safely under control at all times.

It will pay you to specify BRADEN Winches for any handling job. See your nearest dealer or write to the factory for new catalog which will be ready soon.

Sound design and skilled workmanship that go into the manufacture of BRADEN Truck Winches, combined with especially selected materials, make it possible to guarantee every winch that leaves the factory. The Braden Winch Company registers every winch manufactured by them, and guarantees it to the original purchaser against defects in workmanship and materials, for a period of one year from date of purchase. Further, the worm gear is guaranteed against breakage through the tooth-base ring (split open), so long as the winch shall remain the property of the original owner.

"Buy BRADEN — They are SAFER"

BRADEN WINCH COMPANY
1001 East Admiral Boulevard

BRADEN Winches

TULSA 3, Oklahoma

SYNTHETIC LUBRICANTS

(CONTINUED FROM PAGE 43)

lubricant and filter cartridge after 500 miles of operation. Each of the fleets was run with a different oil change period and one fleet was operated without an oil change for the total mileage. In all cases the fleets were under the control of the fleet operator during the entire test. Analysis of the used lubricant samples, inspection of engines, tabulation of lubricant consumption and analysis of the operating record constituted the test program. The significant conclusions drawn from these tests, now in their second year, are summarized below:

1. Out of over 100 vehicles serviced, none had any loss in oil pressure indicating a clogged oil screen.

2. Vehicles which were inspected at the start of the test, and inspected periodically thereafter, showed a gradual cleaning up of the engine with no formation of new sludge. After a year's operation disassembled engines were essentially free of sludge and varnish.

3. In vehicles in which petroleum oil had been changed regularly because of lubricant deterioration as a result of severe service conditions, analysis of the synthetic lubricant indicated the change period could be at least doubled.

However, in those vehicles where mineral oil was changed because of gasoline dilution or some other factor of contamination the lubricant change period could not be extended. To study resistance to deterioration a few test vehicles equipped with filters have so far been driven 30,000 miles without changing the oil. In these cases, the engines remained clean and there has been no indication of abnormal deterioration. The oil filter cartridges are being changed at recommended intervals. These tests are being continued.

4. Improved low temperature cranking and starting characteristics were experienced in vehicles operating in low temperature areas.

5. In engines where consumption of petroleum oil was high, primarily as a result of leakage past the pistons into the combustion chamber, spark plug fouling was reduced or eliminated when the synthetic oil was substituted.

6. The average lubricant consumption compared very favorably with the consumption of petroleum oils used prior to the change. The vehicles involved in these commercial fleets were divided about equally between trucks and passenger cars. The following table gives the lubricant consumption data for one of these fleets.

LUBRICANT CONSUMPTION

Vehicle No.	LB-300 Vehicle Mileage	Consumption LB-300 Mi./Qt.	Previous Consumption Mi./Qt.
1	9,700	482	250
2	16,000	760	180
3	4,341	577	670
4	11,000	440	396
5	8,700	458	424
6	10,250	512	334
7	3,900	3780*	850
8	10,072	322	300
9	10,000	427	1015
10	15,500	888	768
11	10,500	262	192
12	4,100	357	270
13	6,600	1110	251
14	36,400	212	398
15	41,000	298	388

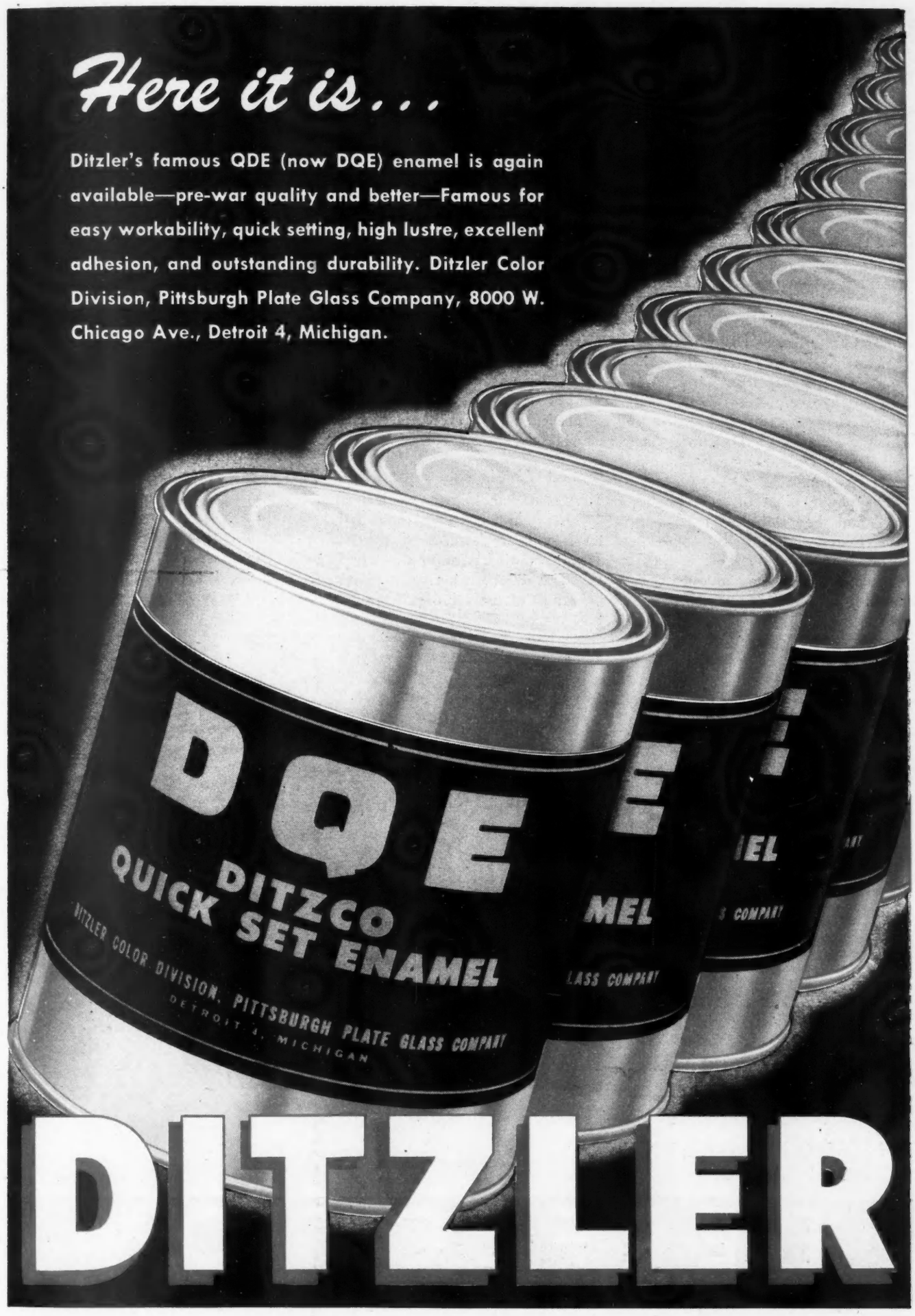
* Motor Overhaul.

(TURN TO PAGE 248, PLEASE)



Here it is . . .

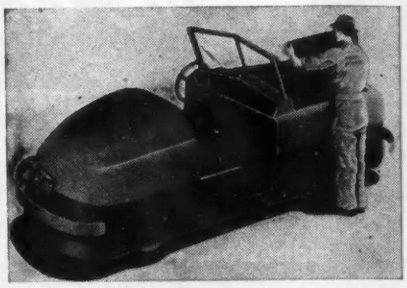
Ditzler's famous QDE (now DQE) enamel is again available—pre-war quality and better—Famous for easy workability, quick setting, high lustre, excellent adhesion, and outstanding durability. Ditzler Color Division, Pittsburgh Plate Glass Company, 8000 W. Chicago Ave., Detroit 4, Michigan.



DITZLER

Light Delivery Features 2-Cyl. Engine, Plastic Body

Has fluid drive, 80-in. wheelbase, 13-ft. turning radius. Will sell for about $500



The Bobbi-Wagon, package delivery, powered with 2-cyl., air-cooled engine. Body is plastic, steel-enforced and roomy. Max. speed, 60 m.p.h.

TWO models of the Bobbi-Kar, a new light plastic two-place roadster and a commercial package delivery vehicle, are now in production at the California factory of the Bobbi Motor Car Corp., San Diego. These vehicles have been developed in response to requests from large groceries, department stores and public service companies for a light delivery which is economical in operation as well as convenient for negotiating heavy city traffic.

The power plant of the "Bobbi-Kar" and the "Bobbi-Wagon" is a two-cylinder, horizontally opposed, four-cycle, air-cooled engine mounted in the rear. Economy of operation is said to be very high. It will attain 40 to 50 m.p.g., and has a top speed of approximately 60 m.p.h. A sedan model will be developed later which will be powered with a 4-cycle water-cooled engine.

The transmission and differential assemblies have been eliminated by a direct drive from the engine to the fluid drive coupling. No clutch pedal is needed, but a reverse lever is located on the steering column.

Light, Easily Maneuverable

EASE of handling, particularly in heavy traffic, will be one of the most popular features of the car. Turning radius is approximately 13 ft. The 80-in. wheelbase permits operation of the car over terrain as rough as any that may be traversed in any light car. Overall length of the two-place Bobbi-Kar is 132 in. The body width is 52 in., and the height of the top is 55 in. The adjustable seat is 43 in. wide. Total weight of the car is under 800 lb.

The chassis of the car is formed from welded steel tubing. The sup-

(TURN TO PAGE 184, PLEASE)

Tops in—
DURABILITY,
ADAPTABILITY
to the job—and
CONVENIENCE
on the job.

For all makes and models of trucks

Write for literature and names of nearest Distributors

THE PERFECTION STEEL BODY CO.
Galion, Ohio



PERFECTION
TRUCK BODIES AND HOISTS


AUTOPULSE
WHY DO IT THE HARD WAY?
"I have been operating this station on Highway 1 for about 12 years. If I stocked all the types and sizes of fuel pumps that drivers have asked for, I'd have to build a small warehouse for fuel pumps alone and tie up a lot of money in inventory. Couldn't do that.
"That's why I took on Autopulse. In single or multiple units (units are all the same), I can equip any passenger car, truck, bus, or tractor, regardless of size or horsepower, with a new fuel pump in just a few minutes. And my whole inventory can be tucked away in one corner. I never have to disappoint a customer and I've never had a complaint on Autopulse performance."
It's the easy way of handling fuel pump trouble and it also seems to be the best.
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PUSH+PULL POWER! LOOK how the new, perfect mechanical principle of push plus pull clinches this clamp's powerful wire strands into a vise-like grip on the hose.

RUGGED STRENGTH! SEE how every part of the "360" is "oversize" for extra strength. For instance—compare the driving power of powerful screw with that found on the ordinary hose clamp.



NO BLIND SPOT! THE ABSENCE of a "tongue," found in all other clamps, completely eliminates the "blind", or "soft" spot—the primary cause of leakage in other clamps.

A PERFECT CIRCLE! DON'T OVERLOOK how, because of the new push plus pull principle, terrific pressure is exerted on every point, without damage to the hose. This 360 degree grip is positive leakage prevention.

UNUSUAL TAKEUP! COMPARE the exceptional takeup of the "360" with that of the ordinary clamp. This more than sufficient takeup guarantees elimination of leakage trouble, even on today's irregular synthetic hose.

Write today for your FREE sample of Central's "360" Wire Hose Clamp and Bulletin Number 2546.

CENTRAL EQUIPMENT CO.
900 S. Wabash Ave., Chicago 6, Ill.

LIGHT DELIVERY

(CONTINUED FROM PAGE 182)

porting structure which surrounds the passenger space and reinforces the entire body is also welded tubular steel. The Bobbi-Kar body is moulded from high-strength plastic which in resistance to impact, corrosion and vibration, is, in many respects more durable than body steel. The body is pretinted with the coloring evenly distributed through its entire thickness. Scratches are removed by light sanding and polishing. Any section of the body may be replaced.

Functional Design

THE BODY itself is completely functional. Rider and passenger leg and seat room is comparable with that obtained in much larger cars. Front and rear fenders have been completely submerged in the flowing lines of the body. Headlights are flush type sealed-beam at standard height and blended into the front elevation of the car. The rear deck tapers and hinges at the back so that it may be swung open for access to the engine and for tire change. The rear bumper acts as a counterbalance for ease in lifting. Rubber strips completely surround the car to protect the finish from high curbings, etc.

Standard operating instruments have been arranged on the instrument panel directly ahead of the driver. Upholstery is leather, and interior furnishings are of washable plastic. The sectional plastic top is easily removable and may be stowed in the luggage compartment when not in use.

The design of the car was predicated throughout its development upon the use of standard parts. All component parts may be obtained from any well-stocked parts dealers. Tires are 4:50 x 12, mounted on steel disc wheels.

Prices have not been set by the OPA as yet, but it is expected that the two-place models will sell for approximately $500.



Roy M. Warne has been appointed district sales manager for Michigan and upper Ohio and Indiana, the K-D Lamp Co.

Save
- TIME
- LABOR
- PARTS

ON PULLING OPERATIONS



Removing a countershaft bearing from rear axle of KR-11 International—one of many jobs made easy with OTC TOOLS.



Handy McKenick

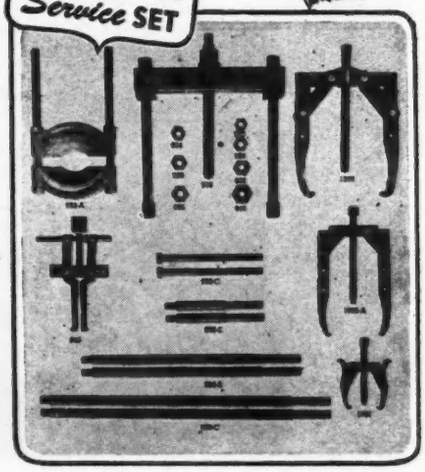
THE OTC PULLING SYSTEM makes quick work of removing and replacing gears, bearings, pinions, collars, snap rings, sleeves, wheels, hubs, pulleys, shafts and other close-fitting parts—many that no other tools can get at—without damage to costly parts, without backstraining labor. OTC is the only COMPLETE Puller line. Approved by Hyatt, M-R-C, New Departure, SKF and Timken for use on their bearings. Portable, for road repairs and shop use.

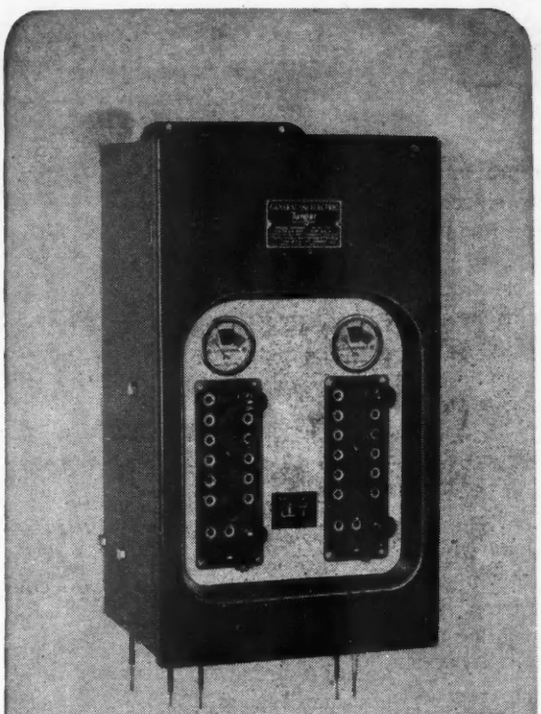
OTC No. PE-12 SET (shown below) is a service-tested selection of OTC PULLERS, Attachments, Threaded Adaptors and Extension Legs to handle widest possible range of work on trucks, busses, tractors, and power equipment. Optional Service Board is 3' x 4', sturdy, convenient, attractive.

Ask Your Jobber or write for details.

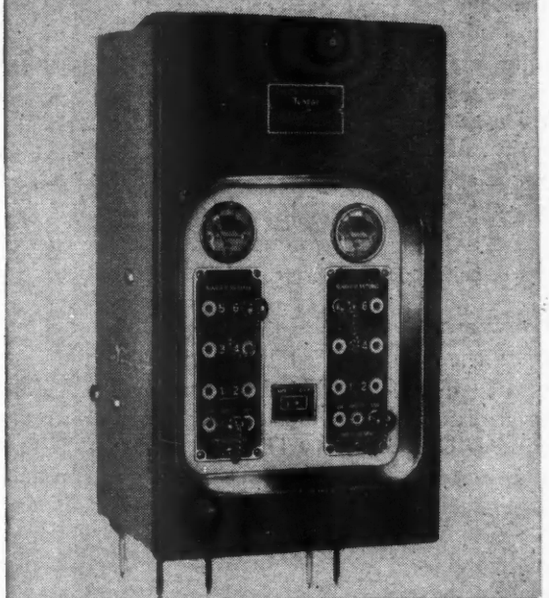
OWATONNA TOOL CO.
335 Cedar St.
Owatonna, Minn.

OTC GENERAL Service SET





"12-24" FULL-WAVE TUNGAR, for large garages . . . fleet owners . . . super service stations



"6-12" FULL-WAVE TUNGAR, for small garages . . . service stations . . . and repair shops

RIGHT NOW, TUNGARS ARE AVAILABLE FOR PROMPT SHIPMENT

Users Everywhere Prefer

TUNGAR RECTIFIERS FOR BATTERY CHARGING

Tungars are universally preferred because they are superior to other types of battery chargers. They do a greater variety of jobs, have higher efficiency, are easy and more economical to operate. Designed to charge at a fast, slow or combined fast-slow rate they can be depended upon to put most any battery charging department on a profitable basis.

Year in and year out Tungars are acclaimed the "Old Reliables" in the battery charging business. At 2 to 6 amperes, the "12-24" full-wave model will charge twelve 12-volt batteries or the equivalent. It's a heavy duty charger that meets the most exacting battery requirements. It has a charging rate adjustable from 2 to 6 amps. for 3 to 72 cells and 2 to 12 amps. for 3 to 36 cells.

The "6-12" full-wave model is a medium capacity charger, also designed for fast, profitable operation. At 12 amperes, it will charge three 12-volt batteries or the equivalent. Like the larger model, it has a charging rate adjustable over a wide range.

Each G-E Tungar is equipped with easy-to-read meters and each offers one-day charging service. For more information write to Section A-263-74, Appliance and Merchandise Dept., General Electric Company, Bridgeport, Conn.

Hear the General Electric radio programs: "The G-E All Girl Orchestra" Sunday 10 P.M. EST, NBC. "The World Today" news every weekday 6:45 P.M. EST, CBS. "The G-E House Party" Monday through Friday 4:00 P.M. EST, CBS.

GENERAL ELECTRIC

How Should Oils Be Classified?

(Continued from Page 78)

Subsequently, the matter was referred to the Division of Marketing, API, and the latter group decided upon the terms:

Regular Oil.

Premium Oil.

Heavy-Duty Oil.

This was later modified and finally defined as follows:

"Regular Motor Oil. This term shall be used to designate a straight mineral oil. Oils of this type are generally suitable for use in internal combustion engines under moderate operating conditions.

"Premium Motor Oil. This term shall be used to designate an oil having proved oxidation stability and bearing corrosion preventive properties. Oils of this type are generally suitable for use in internal combustion engines where operating conditions are such that regular oils do not give satisfactory service.

"Heavy-Duty Motor Oil. This term shall designate an oil having proved oxidation stability, bearing corrosion preventive properties, and detergent-dispersant characteristics. Oils of this type are generally suitable for use in both high speed diesel and gasoline engines under heavy-duty service conditions."

This is what Dr. Wolf proposed as the standard to be published in the 1946 SAE Handbook. And that is what started the fireworks.

Analysis Opens Discussion

CARL GEORGI, Quaker State Oil Refining Corp., opened the barrage with an important technical analysis showing that the mere use of a detergent oil is not necessarily the cure for sludge in a heavy-duty engine. This was demonstrated by slides showing the condition of pistons and valve covers proving that under certain operating conditions the parts were just as thoroughly dirty with or without special heavy-duty oils. He also showed examples of clean parts resulting from the control of entirely different elements.

Georgi stressed that the major considerations in getting clean engines were the selection of the proper kinds of fuels and certain features of engine design beyond control of the oilman. He criticized the accepted laboratory test procedure as not representing actual operating conditions, since the test procedure thus specified was carried out at high speed alone and with a controlled fuel mixture. He argued that fleet operating conditions involved running engines at variable speeds, alternately high speed and low speed, under extreme variations in operating temperatures.

Among the factors contributing to sludge and varnish, Georgi mentioned the presence of water, the type of fuel, the low temperature at which the crankcase was operated, and the variations in fuel mixture from rich to lean. He proposed that engine designers take steps to increase crankcase and cooling system temperatures and to provide powerful ventilation of the crankcase. If this were done, he added, then water, water vapor, and other volatile liquids and vapors generated in the crankcase or getting into the crankcase from the combustion chamber could be drawn off and prevented from accelerating sludge formation. Accordingly, it would be improvement in engine design rather than the curative properties of a lubricant that would be expected to turn the trick. (Editor's Note—M. Georgi's discussion will be published in full in the March issue.)

Other Objections and Comments

GEORGE A. ROUND, Socony-Vacuum Oil Co., expressed disagreement with the proposed classification on the ground that it does not represent tests based upon actual operating conditions, and that the definitions for each grade do not give the minimum specifications suitable for selection by the users. He emphasized the vital role of quality in selecting lubricants and urged that quality in terms of the crude and refining methods still is the most important consideration. Finally, Mr. Round asked whether "brand" names which have influenced lubricant selection for so many years would lose their meaning under the new classification. If that is the case, he was opposed to any move that might result in unbranded packages. In closing Mr. Round urged that more study be given this problem before any standards are adopted by the SAE.

A. O. WILLEY, Lubri-Zol Corp., appeared to agree that a simplified classification was desirable but asked for a better definition of "premium" oil and a definition of the operating duty for which each grade is recommended.

T. C. SMITH, AT&T, representing the fleetmen, mentioned some experiences with the new types of heavy-duty lubricants, particularly the lack of compatibility of the various grades with one another. Where a change is made from "regular" to "heavy-duty" oil, the recommended practice in his organization is to drop the pan and clean the entire engine before filling with heavy-duty oil. He confirmed Mr. Georgi's analysis by pointing to the ill effects of cold engine operation and the need for improvement in engine design. Mr. Smith urged establishment of "consumer" specifications as the starting point for recommended practice in the selection of types and makes of oil by the fleetman.

A. J. JONES, Kendall Refining Co., made a strong plea for the retention of the ideal of quality in lubricants as distinguished from a simplified nomenclature. He went on record as opposing the use of the recommended nomenclature in the SAE Handbook until further work had been done to clarify the situation. To show the probable confusion resulting from the current recommendations, he drew attention to what happened in the field of gear lubricants following the introduction of hypoid lubricants. He claimed that instead of the limited classifications originally adopted, gear lubricants now are known under at least 11 different names. He asked that the term "premium" continue to imply quality oil and demanded definitions of detergency and oxidation stability.

No Decision

THE meeting so charged with dynamite unfortunately ended late without further comment and without decision as to the acceptance or rejection of the recommendations in the Wolf paper.

Until the results of some stormy committee meetings scheduled at the end of the Annual Meeting become known, the final decision cannot be recorded here.

END

(Please resume your reading on p. 80)

a new Oil Clinic



Mr. Cecil Bentley, Director of DeLuxe Research, and these men are presenting the results of DeLuxe Research at Clinic meetings throughout the country.

DELUXE
Research brings you NEW BIG PROFIT FACTS

It's an absorbing story . . . this story of oil and oil filtration! It's a Research Story that has been previewed at S.A.E. meetings and written up in technical journals! DeLuxe men bring it to you in coast-to-coast Clinics. Important new feature of these clinics is a series of Full Color Charts. These charts are of absorbing interest for they clear up the mysteries and illustrate the oil cleansing principles which everyone should know who has anything whatever to do with oil and its use in automotive and diesel engines!

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DOES MORE THAN STRAIN OIL . . . MORE THAN FILTER OIL
ACTUALLY CLEANSES OIL

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FOR TRUCKS, TRAILERS AND BUSES.
THE DAYTON STEEL FOUNDRY CO.
DAYTON, OHIO

SYNTHETIC LUBRICANTS

(CONTINUED FROM PAGE 180)

Diesel Engine Use

A NUMBER of 480-hour Caterpillar single-cylinder engine tests (CRC Designation L-1-545) have been run with lubricant LB-300. These tests were satisfactory except in two respects (a:) There was some impacting of carbon behind the top ring although the ring remained free in the groove, and (b) some soot from the fuel adhered so tightly to the piston skirt that light wiping with a clean rag did not completely remove it. A typical piston from a 480-hour Caterpillar run is shown in Fig. 8.

Heavy scratching of the metal which usually occurs on the piston above the ring travel area was almost completely lacking in these tests. The results indicated that some detergency would be desirable in order to pass the test, which is a requirement to meet Specification 2-104(b), although performance of the lubricant on the 480-hour endurance run was otherwise quite satisfactory.

A small amount of detergent added to Lubricant LB-300 gave improved results on the 480-hour endurance run, as shown in Fig. 9. Additional work on synthetic base diesel lubricants is currently being conducted.

Viscosity-Temperature

THE SAE viscosity classication of lubricating oils classifies in terms of viscosity only, and does not take into consideration viscosity-temperature relationship of the lubricant. According to the SAE classification system, lubricant LB-300 is an SAE 20 oil. However, because of its high viscosity index, 142, it is equal in viscosity to most SAE 10 petroleum oils at 0 deg. Fahr. and to most SAE 30 oils at 210 deg. Fahr. Fig. 10 demonstrates the product is not adequately described as an SAE 20 oil, and this one grade of synthetic lubricant covers the range of the normal SAE 10, 20 and 30 grades of petroleum oils.

The low pour point and desirable viscosity - temperature relationships insure adequate lubrication under high and low temperature conditions and permit the use of lubricant LB-300 both summer and winter, making seasonal oil changes unnecessary, thereby giving better oil economy when compared with the lighter grades of mineral oil used to insure low temperature starting.

Film Strength

LABORATORY film strength tests have shown that lubricants of the LB and 50-HB series have film strength intermediate between straight petroleum oils and mild extreme pressure lubricants. The 50-HB series has slightly higher film strength than the LB series. These products may be compounded with additives to produce lubricants having EP properties. Some extreme pressure additives used in petroleum oils are not suitable for use in the synthetics because of low solubility.

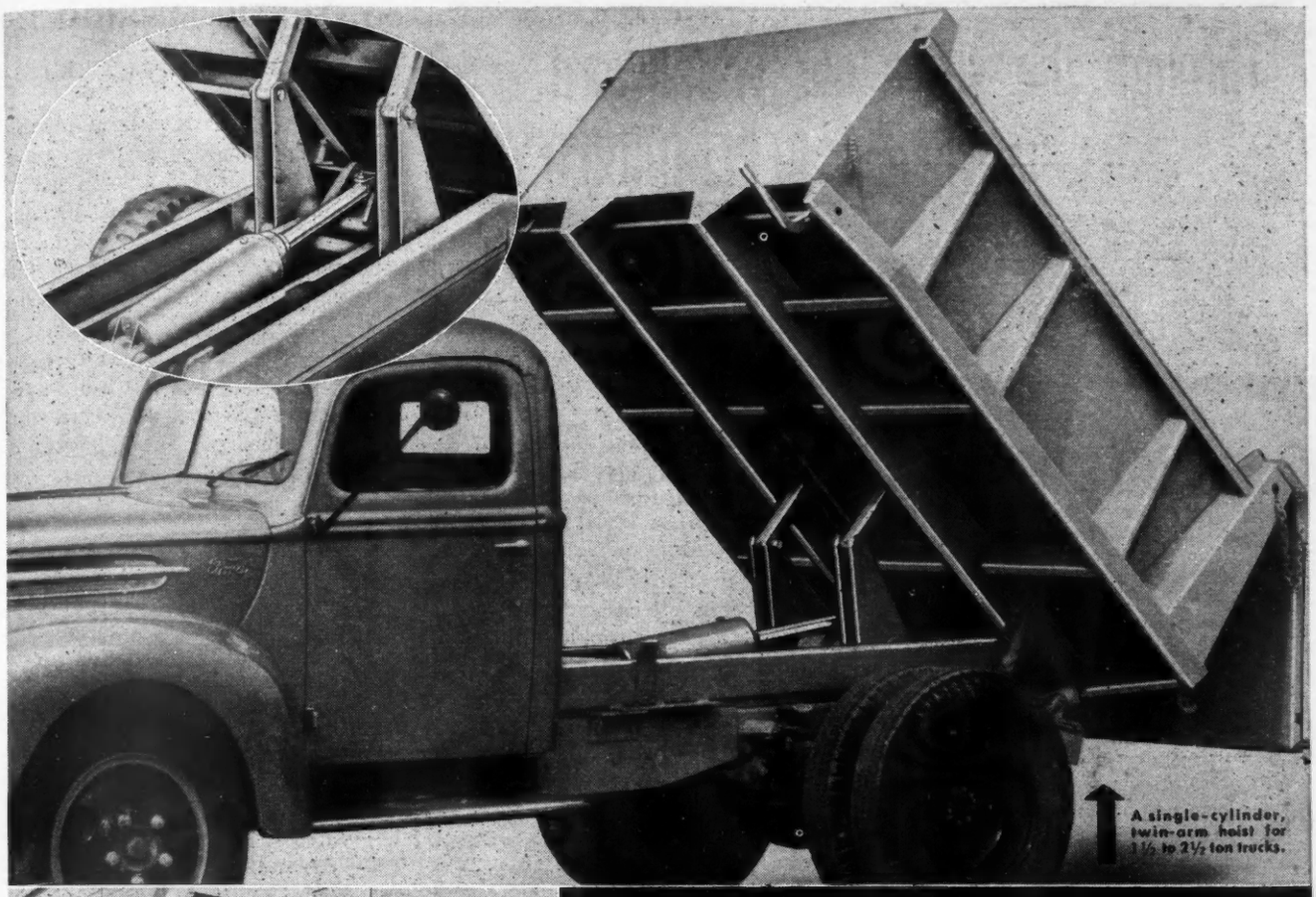
Oil Inspection Tests

SINCE the synthetic lubricant is chemically different from petroleum oils, many of the chemical tests applied to petroleum oils do not have the same significance. For example, the values obtained for naphtha insolubles and chloroform solubles on the used lubricant are misleading because of different solubility characteristics of the synthetic oil and its oxidation products. Thus, in view of the chemical difference between the two lubricants, we believe a more accurate method is to analyze for free as well as total acid. For this determination we use a modified ASTM method in which the results are expressed in milliequivalents per gram of oil.

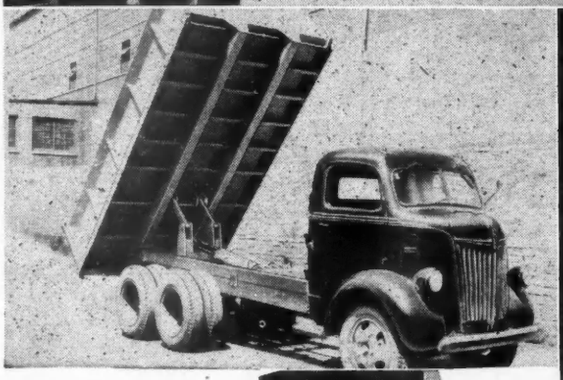
The measurement of viscosity is, of course, as significant with synthetic oil as with petroleum oil as it is a physical property.

(TURN TO PAGE 250, PLEASE)

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AMERICAN SAFETY TANK CO.
KANSAS CITY, MO.



A single-cylinder, twin-arm hoist for 1½ to 2½ ton trucks.



A twin-cylinder, twin-arm hoist for 8 to 20 ton trucks.

A twin telescopic hoist for rock and ore bodies.



BH-117

Heil Bodies and Hoists are built to lick the Tough Jobs

The ability of Heil Bodies and Hoists to give you extra years of profitable service has been proved wherever tough working conditions test soundness of design and quality of materials.

Heil units are built to take the punishment of the tough jobs . . . to give you quick, clean dumping under all operating conditions . . . extra speed that enables you to haul more loads per day . . . and more profit on every load you haul.

Compare such features as the heavy-duty sub-frame . . . reinforced body floor . . . simple arm construction . . . precision-machined pump . . . etc. — and you see why Heil quality construction assures you of dependable, profitable service with a minimum of "time out" for service and repair.

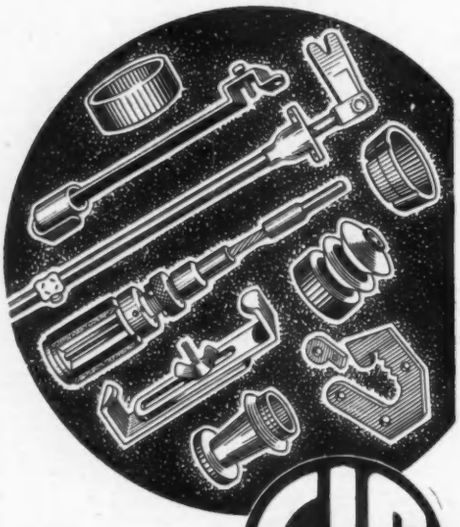
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SYNTHETIC LUBRICANTS

(CONTINUED FROM PAGE 248)

The ash value as determined by the ASTM method appears to have the same significance as with petroleum oil since the amount of noncombustible solids in the used lubricant may have a bearing on engine wear and performance. In used synthetic lubricant, ash has been identified as largely lead from the fuel.

It is felt that viscosity, ash value, free acid and total acid are the chemical and physical tests most useful in following the condition of the used lubricant.

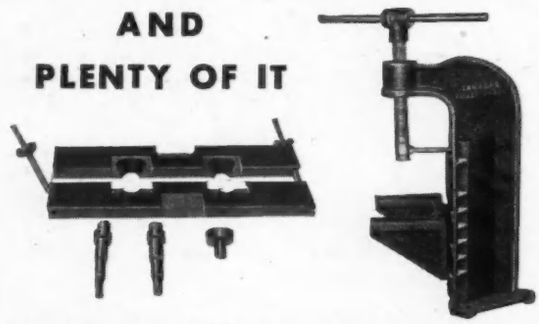
Solvent Action

AS PREVIOUSLY mentioned, lubricant LB-300 has a solvent action for many of the oxidation products formed from petroleum oils. The lubricant has the ability to clean gradually most dirty engines while the vehicle is being operated. This cleaning action brings up several questions concerning engine performance.

1. Will the petroleum oil oxida-

(TURN TO PAGE 252, PLEASE)

IT'S GOT PULL... AND PLENTY OF IT



That Acme thread will take 30 tons pressure—3 times the usual pressure.

These LANAGAN presses made their first appearance with the armed forces. They were made for Herculean work, such as pulling generator and starter armatures away from end-plates, and pressing new bearings into end-plates—rugged assignments . . . but they haven't been fazed yet. In fact, they're the strongest puller-presses made. With 3 bearing drifts, accommodating 7 different sizes, they are truly universal. Dimensions: H 31½", W 15½", D 19". Equipped with convenient off-and-on plate for electric bearings, if desired. See your jobber, or write direct to us.

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PRECISION AUTOMOTIVE TESTING EQUIPMENT

STOP THIS LOSS!

GAP SPREAD

POWER loss . . . mileage loss . . . hard starting . . . and even fouling trouble can be traced to gap spread.

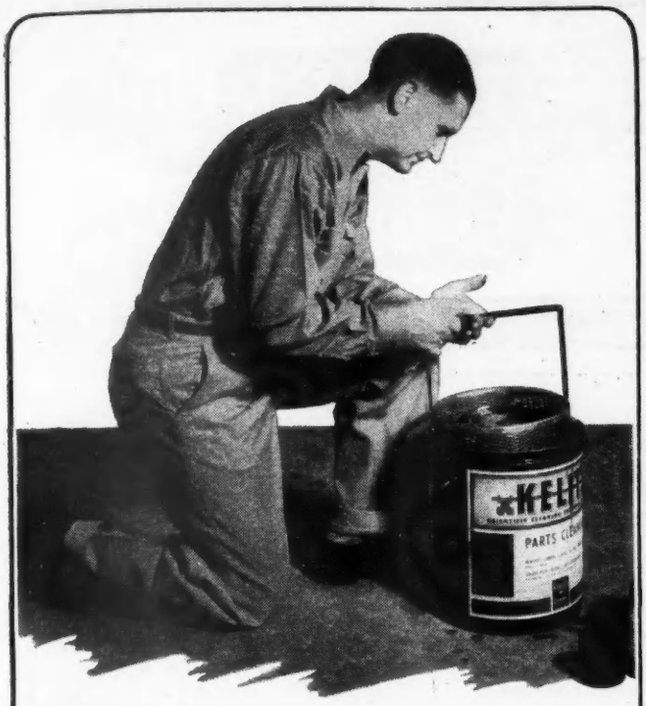
LEONARD Spark Plugs . . . specially designed with SPARK GAP CONTROL . . . eliminate all of these troubles.



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LEONARD PATENTED Air Cooled SPARK PLUGS



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Faster, Better Parts Cleaning

Measure the time you save with Kelite Parts Cleaner — the fastest, simplest, most completely satisfactory material yet developed for cleaning pistons, fuel pumps, carburetors and other small parts.

FAST — Cuts cleaning time far below that of ordinary methods.

EFFECTIVE — Parts come out really clean. Carbon wipes off easily with a rag.

SAFE — Safe on all metals. No flash point. Can not burn or explode.

ECONOMICAL — Sealed to cut down on drag out and loss by evaporation.

EASY TO USE — Rinses freely with solvent. Seal eliminates odor.

Kelite Parts Cleaner comes in a handy six gallon drum (with or without parts tray —as desired).

Be sure to see a demonstration of this amazing new Parts Cleaner. Call your local Kelite office or write direct to Kelite Products, Inc., P.O. Box 2917, Terminal Annex Station, Los Angeles 54, Calif. No obligation of course.

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KELITE pH Control

KELITE

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Dangerous exhausting strains that wear your drivers down . . .



. . . and this . . .

Now SAF-T-STEP does the work!



• SAF-T-STEP makes it possible for one man to do many load and unload jobs that ordinarily require two!

The SAF-T-STEP will support a 1000 pound load. SAF-T-STEP comes in 2 models, one designed for rear mounting, the other for side use where hanger space is restricted. When not in use SAF-T-STEP folds directly under truck bed. SAF-T-STEP is engineered to fit most flat-rack, stake body, van, trailer or "semi" body designs with custom-like precision.

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RESILIENCE The ability to respond to quick shocks from rutty, bumpy roads, under any and all load conditions, is a feature of TUTHILL Leaf Springs, because of their *resilience.* This shock-absorbing quality is but one of several reasons why they are used by leading truck and trailer manufacturers.

We make both standard and special leaf springs. What are your requirements?



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BRIGHT BEAM
PLASTIC
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See for yourself that they are all that we claim for them: Shatter Proof • Flexible • Color Fast • Weather Proof • Transparent • Economical. Made in two colors—red and amber—and in six sizes, 2⅛" to 8½". Cut operating expenses by using BOWMAN Lenses for replacements.
Write Us For Catalogue
BOWMAN AUTOMOTIVE PLASTICS COMPANY
4316 W. 192nd St., Cleveland 16, Ohio

SYNTHETIC LUBRICANTS

(CONTINUED FROM PAGE 250)

tion products dissolved in the lubricant affect its lubricating ability?

2. Will this cleaning action loosen dirt which may subsequently be picked up by the oil pump?

3. What will happen if mineral oil is added to a crankcase containing synthetic lubricant which has a large amount of mineral oil oxidation products dissolved in it?

Taking up these questions in the same order:

1. None of the dynamometer engine tests or field tests in vehicles so far conducted has demonstrated any detrimental action due to dissolved oxidation products of petroleum oil.

2. There is a certain amount of dirt which circulates in the lubrication system under the most ideal conditions. It is reasonable to theorize that a larger amount, released when the gummy binders are dissolved in the synthetic, will be circulated during the period when the engine is subjected to the cleaning action of the synthetic lubricant.

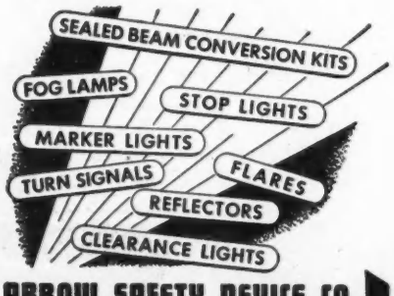
We feel the important point is whether the average particle size of this dirt or insoluble matter has increased. Microscopic examination has revealed that larger particles are not circulated as a result of the cleaning action of the synthetic lubricant. We have observed that any large particles circle to the bottom of the crankcase. If the oil pan is removed from a dirty engine and cleaned prior to the installation of the synthetic lubricant, much of the insoluble dirt released as a result of the cleaning action will be found on the bottom of the pan if it is again inspected after several thousand miles of operation.

(TURN TO PAGE 254, PLEASE)

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Velvetouch
BIMETALLIC FRICTION MATERIAL
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Bus Line finds way to keep brake system trouble-free — rings clean!



Here is one of the 14 units operated by the 25-year-old Nassau Bus Line over Long Island-New York suburban routes. Eric Weberbauer, maintenance superintendent of the Bee Line Bus Company, subsidiary owner of the Nassau Line, reports below on results this line has had with Gulf Dieselube H.D.—tags it "the best oil we've used!"

"THERE WAS A TIME when we had to clean unloading valves in our air compressors almost every two weeks," says Eric Weberbauer, of the Bee Line Bus Company, parent company of the Nassau Bus Line.

"But, since using Gulf Dieselube H.D. in our Nassau Line, our air appliances have stopped clogging up and our power brake system has been free from trouble. Dieselube keeps the parts clean. It prevents the formation of harmful gum.

KEEPS MOTORS CLEAN TOO

"And, believe it or not, in the year we've been using it in our engines, we've never had a ring stick. Before we used Gulf Dieselube, we had plenty of trouble and rings used to stick solid.

"When you come right down to it," continues Mr. Weberbauer, "there's no comparing Gulf Dieselube H.D. with other oils — for Dieselube *keeps motors clean!*

"We've noticed the crankcase is a lot cleaner; valve chambers, strainers, they're all free from sludge and gum.

"Dieselube H.D. simply doesn't gum up or clog the motor.

"On the basis of results, Gulf Dieselube H.D. is the best oil we've used!"

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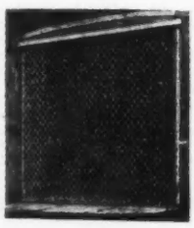
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SYNTHETIC LUBRICANTS

(CONTINUED FROM PAGE 252)

The question has been raised regarding the possibility of clogging with a lubricant having a cleansing action, as in the case of oils having detergent characteristics. There is no evidence from present laboratory or field test data available that the mild solvent action of lubricant LB-300 is loosening deposits that might cause or aggravate clogging. On the other hand, we have observed that engines which had been heavily sludged previously, cleaning of the hard dense types of sludge was slow and not complete even after extensive mileages using LB-300.

3. If petroleum oil is added to a crankcase containing synthetic lubricant which contains a large amount of dissolved sludge and other oxidation products, a certain amount of dissolved material may be precipitated. The more oil added, the greater the amount of oxidation products so precipitated.

Conversely, again adding synthetic lubricant would tend to redissolve the oxidation products. The synthetic lubricant and petroleum oil are only partly soluble in each other. We do not consider it good practice to add mineral oil to the synthetic except in an emergency, although mixtures of the two lubricants can be run in an engine free of sludge without difficulty. Tests in vehicles for 20,000 miles on a mixture of petroleum oil and synthetic lubricant have been carried out with satisfactory results.

Water Solubility

THE SYNTHETIC lubricants of the LB series differ from petro-

(TURN TO PAGE 256, PLEASE)

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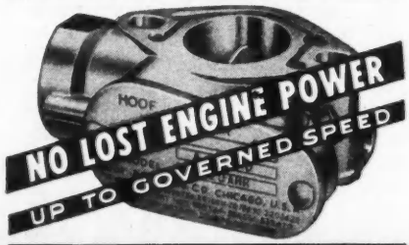
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It describes the unique combination of electrically and mechanically important characteristics of Fiberglas such as: high temperature, moisture and acid resistance, favorable space factor and high tensile strength. It shows how the insulating impregnants increase the effectiveness of Fiberglas' inherent characteristics and add others such as high dielectric strength, insulation resistance and resistance to abrasion.

You will see why the use of this basic, inorganic, insulating material is increasing so rapidly—why so many designers, manufacturers and repair shop operators prefer it.

Be sure to have a copy of this new booklet in your file for ready reference. Write for your copy today —there is no obligation. Address: *Owens-Corning Fiberglas Corp., 1960 Nicholas Bldg., Toledo 1, O.*

In Canada, Fiberglas Canada Ltd., Oshawa, Ont.

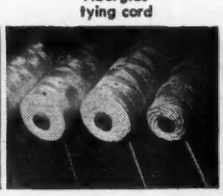
Fiberglas varnished cloth and tape



Fiberglas insulated wire



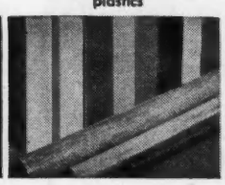
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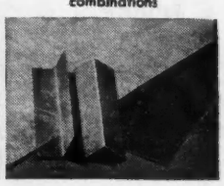
Fiberglas saturated sleeving and varnished tubing



Fiberglas laminated plastics



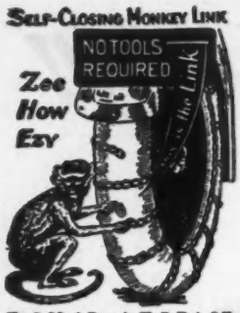
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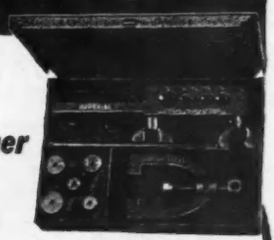
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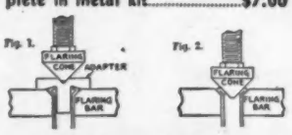
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SYNTHETIC LUBRICANTS

(CONTINUED FROM PAGE 254)

leum oils in that they will dissolve and hold in solution approximately 3 per cent of water by weight at room temperature. If water in excess of this amount exists in the crankcase, it will appear as water globules. On standing the water will form a lower layer if the temperature is above 50 deg. Fahr., or float on the oil if the temperature is below 50 deg. Fahr.

This limited water solubility has certain advantages. For example, during winter operation often 1 or 2 per cent water is present in the crankcase which remains undissolved in petroleum oil. This water upon freezing may present a serious lubrication problem by restricting oil flow. One or 2 per cent water will dissolve in the synthetic and will not freeze out of solution and interfere with oil circulation even at temperatures below the pour point of the lubricant.

An operating problem which has caused considerable concern under normal winter conditions, particularly in "package" delivery fleets, is the control of winter sludge which contains water, oil and oil decomposition products. While a water emulsion can be formed in an engine with the synthetic lubricant, the "mayonnaise" type of sludge is not formed, probably due to a combination of water tolerance and the absence of high molecular weight oxidation products such as are formed from petroleum oils.

When disassembled engines operated on mineral oil are to be exposed to high humidity conditions for extended periods of time, they should be treated with a rust preven-

(TURN TO PAGE 258, PLEASE)

BETTER than Ever Before



VITAL TO—
• Low Mileage Costs
• Easy Operation
• Maintained Schedules

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BALL AND ROLLER BEARINGS

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The under-carriage voted first choice by the industry is now made even better!

Its tubular axles with special alloy tapered spindles resist deflection from *all* directions, instead of from merely overhead, eliminating nearly *all* of the usual axle troubles.

Its bearings have been made to serve far more efficiently; to operate at their *full* rated capacity, and for much longer service, through their *correct* positioning—by Trailmobile's exclusive ELECTRONIC stress-determinations!

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Trailmobile's *properly* rubber-bushed radius-rods, under load, are *truly* horizontal; hence *actually* save tires, due to *stable* axle-alignment.

For positive braking a Trailmobile axle accommodates either air or vacuum diaphragms. And they are so designed as to permit *maximum* leverages for *full* braking power.

All in all, Trailmobile's *standard* under-carriage remains without parallel. See it, at your near-by Trailmobile Branch. And, if you *haven't* as yet seen Trailmobile's new Tandem, it, in itself, is worth your visit, soon!

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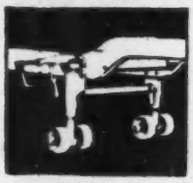
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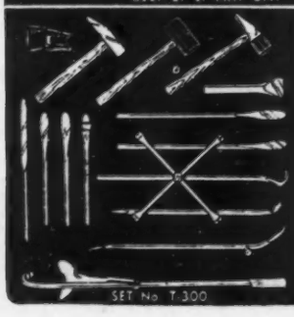
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SET No. T-300

SYNTHETIC LUBRICANTS

(CONTINUED FROM PAGE 256)

tive oil. This applies also in the case of the synthetic lubricant. Work is in progress to develop suitable additives to incorporate in the product to provide improved rust preventive characteristics.

Use of Filters

THE USE of filters when using the synthetic lubricant is desirable as the ash value can be kept at a very low point. Most of the commonly used oil filters have been tested and function satisfactorily with the synthetic lubricant.

As previously explained, the viscosity increase of LB-300 in the crankcase is very low. This may have something to do with improved performance of filters in removing solids which contribute to high ash values as increased viscosity of the oil is not a factor in preventing efficient removal of solids by the filter cartridge.

Lubricant Changes

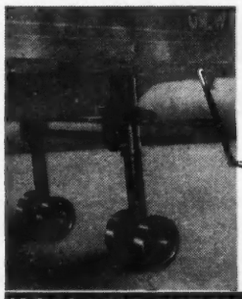
OIL CHANGE recommendations for the synthetic lubricant cannot be given any more accurately than in the case of petroleum oils, as the proper oil change period depends upon a number of factors. There is, however, one essential difference which must be considered. With the synthetic lubricant the oxidation products are for the most part volatile, which means the lubricant remains essentially unchanged with use, but with mineral oils non-volatile products are formed which eventually become converted to oil insoluble gums, sludges and varnish.

(TURN TO PAGE 260, PLEASE)



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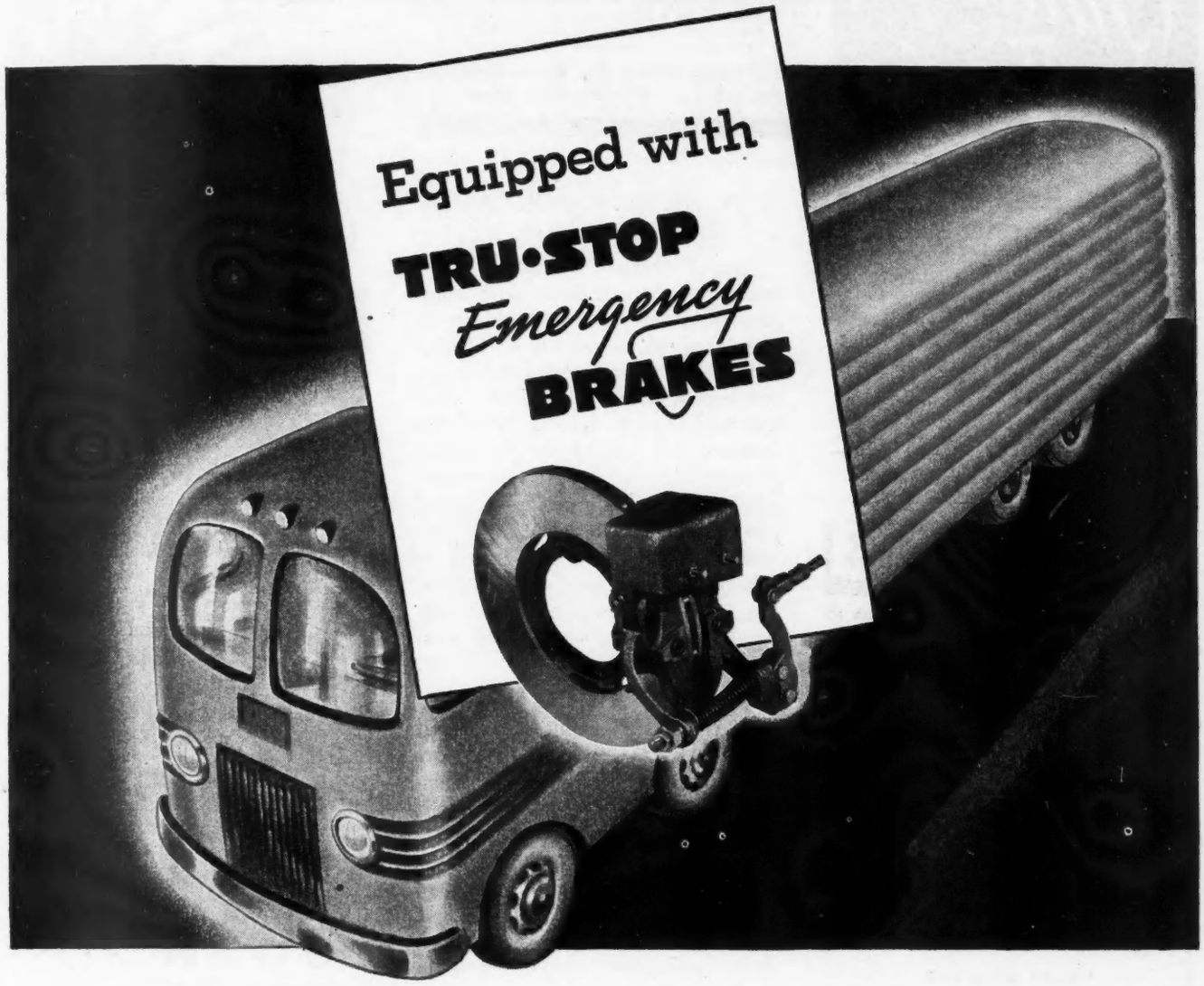
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You too, can be a proud user of Quality Tools. Their modest cost will surprise and interest you.

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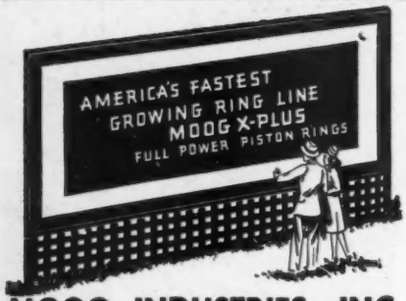
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THE PERMALUX COMPANY
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SYNTHETIC LUBRICANTS

(CONTINUED FROM PAGE 258)

Beyond a certain period, which depends on service conditions, these decomposition products build up in petroleum oils, necessitating a change of lubricant in order to maintain the proper viscosity. Considering only this basic factor, no change of the synthetic oil would be necessary. However, from a practical standpoint the presence of road dirt, metal particles, etc., make oil changes necessary, and there is no reason to believe that the synthetic lubricant can be used longer when these contaminants are present than when using petroleum oils.

Other Uses for LB Series

IN ADDITION to use in internal combustion engines there are many places where the special properties of the LB series of synthetic lubricant—such as low pour point, high viscosity index and non-sludging characteristics—can be utilized to advantage. In addition to their use as hydraulic fluids and plasticizers, utilization as lubricants in in many fields is being studied. These include powdered metal bearings, transmission and differential lubricants, electric motors, textile machinery, wire drawing, metal rolling and stamping, and many others. Greases exhibiting unusual high and low temperature properties have been prepared from oils of the LB series, so far on an experimental basis only.

END

(Please resume your reading on P. 44)

Lindsay Incorporates Company

The partnership of Lindsay & Lindsay, Chicago, manufacturers of Lindsay Structure and Lindsay Struc-Lok, has been changed to an incorporated company under the name of "The Lindsay Corporation."

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* *Cincinnati, Ohio* *

COMMERCIAL CAR JOURNAL'S EDITORIAL INDEX for 1945



For your convenience, here is a list of all articles published in Commercial Car Journal during 1945. It should save time when readers wish to refer to back issues for some particular data—Tire Conservation, PM Programs, Parts Salvage, Tune-up Specifications, etc., etc.

This Index is divided into four parts. The first breaks down all articles according to Subjects; the second part covers New Product Descriptions, the third lists Shop Hints, while the fourth deals with Free Publications offered throughout the year.

COMMERCIAL CAR JOURNAL, Published by CHILTON COMPANY (Inc.)

Editorial and Executive Offices: Chestnut and 56th Streets, Philadelphia 39, Pa., U.S.A.

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The first number following listing represents the month; the second number represents page number

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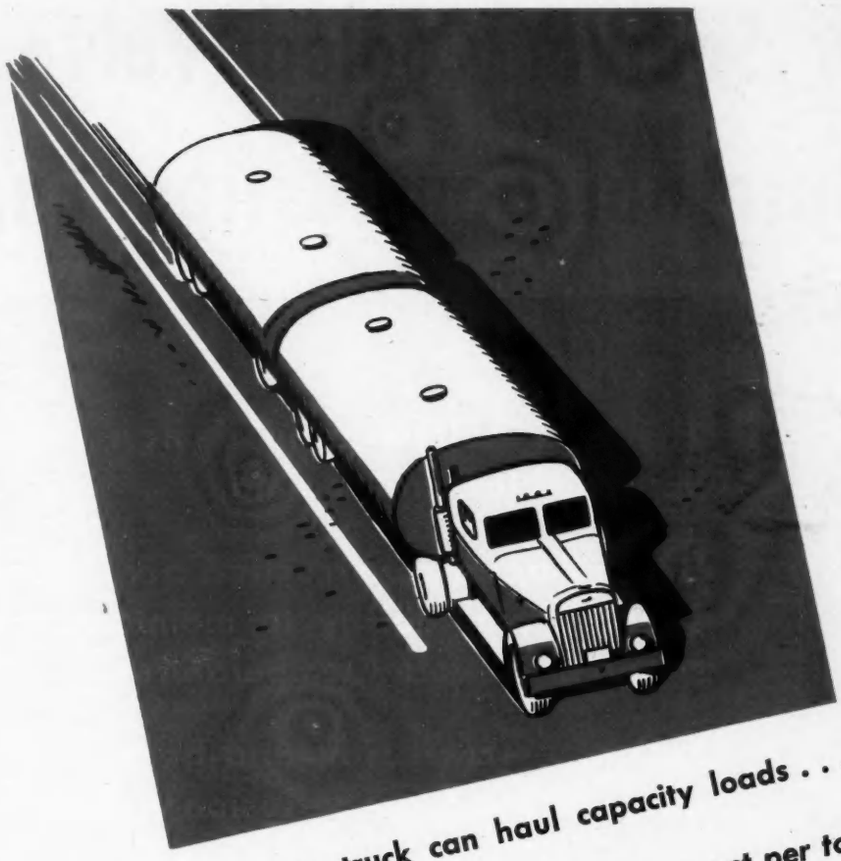
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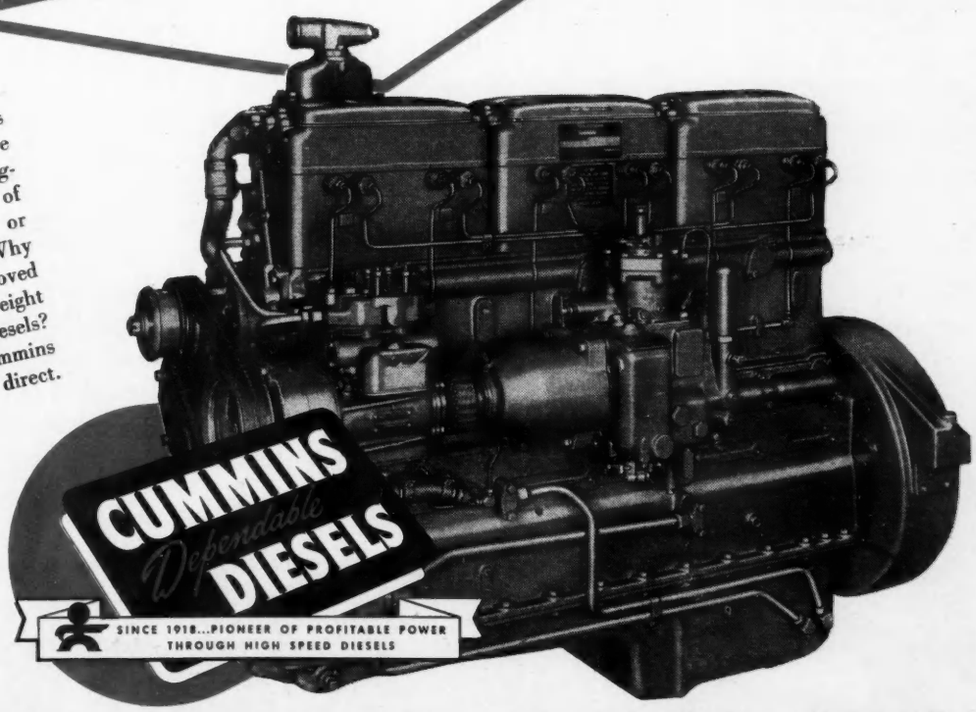


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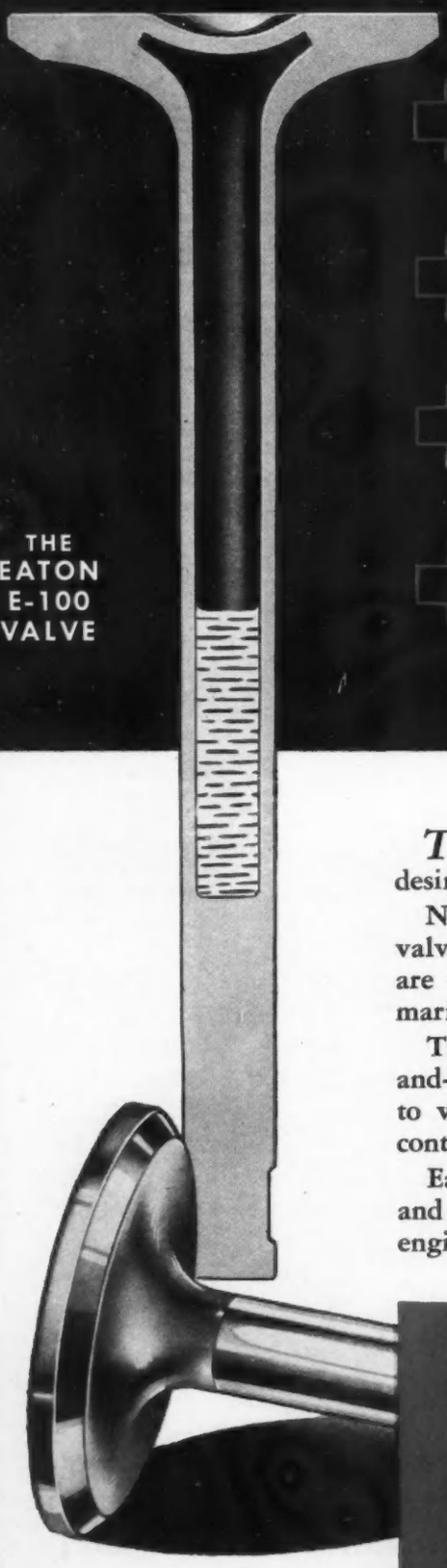
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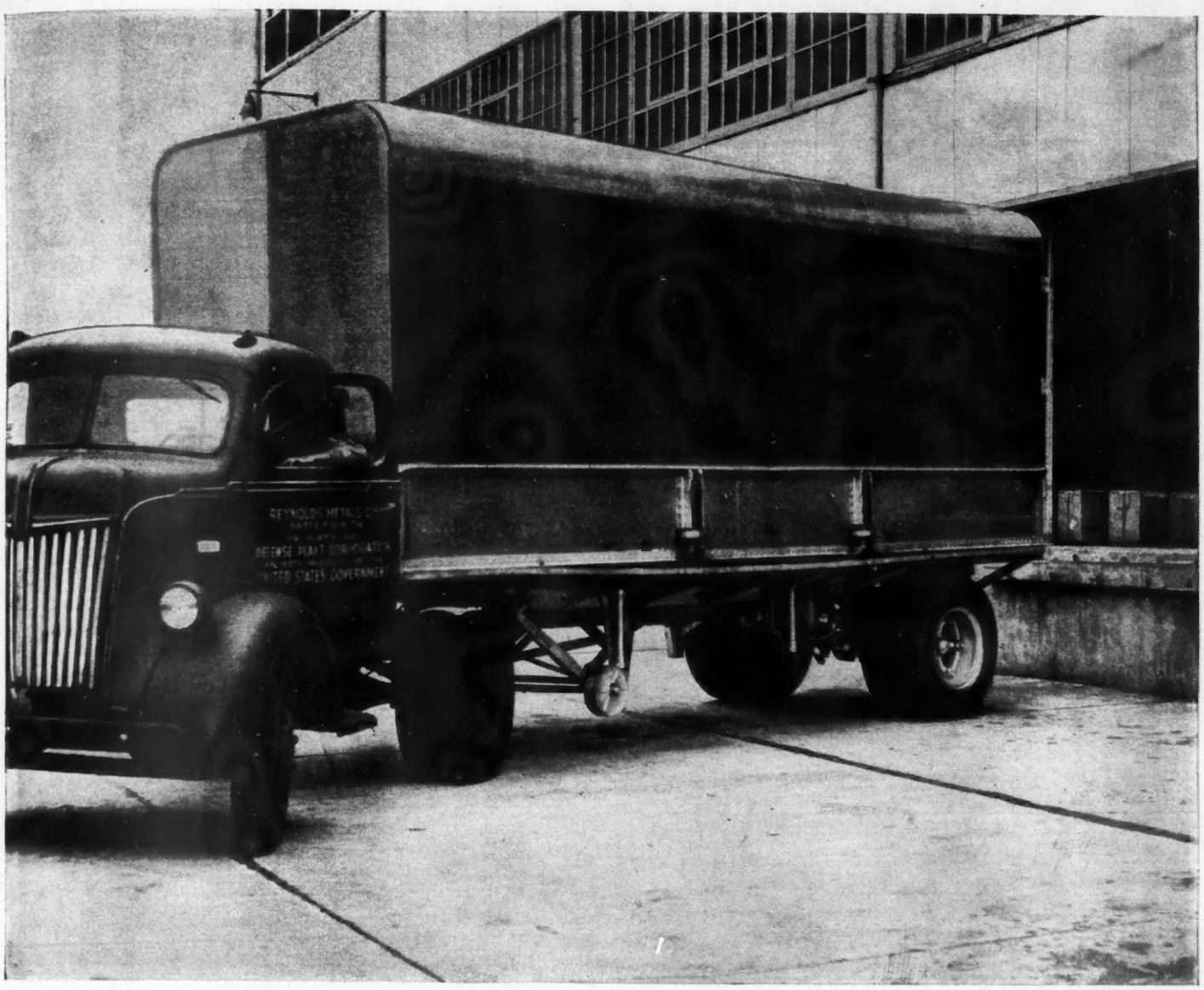
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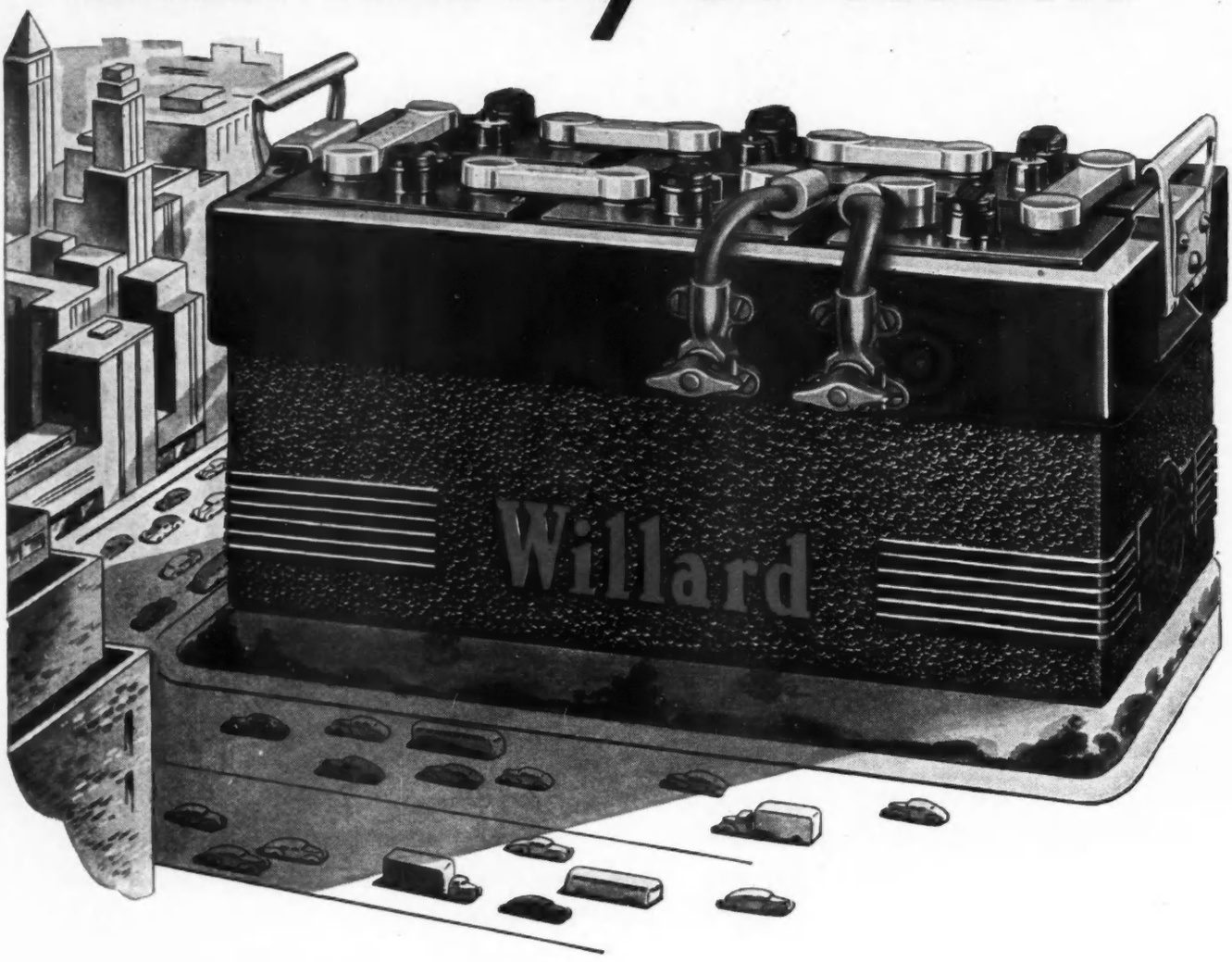
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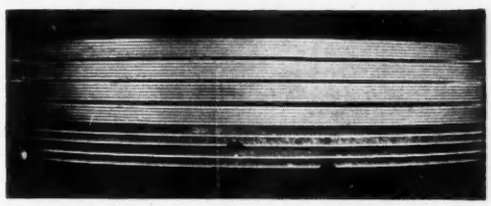
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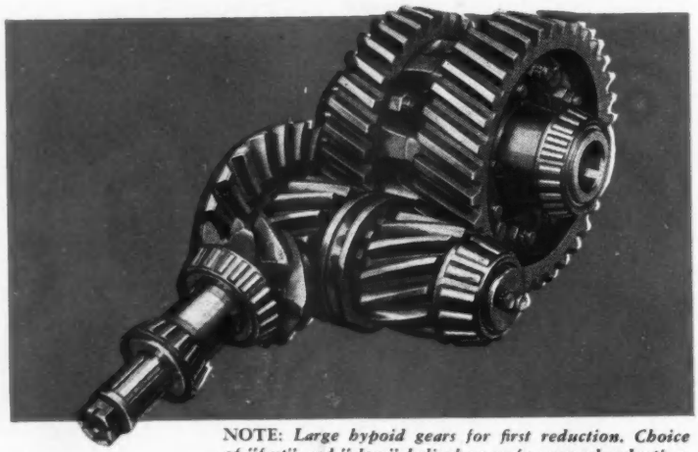
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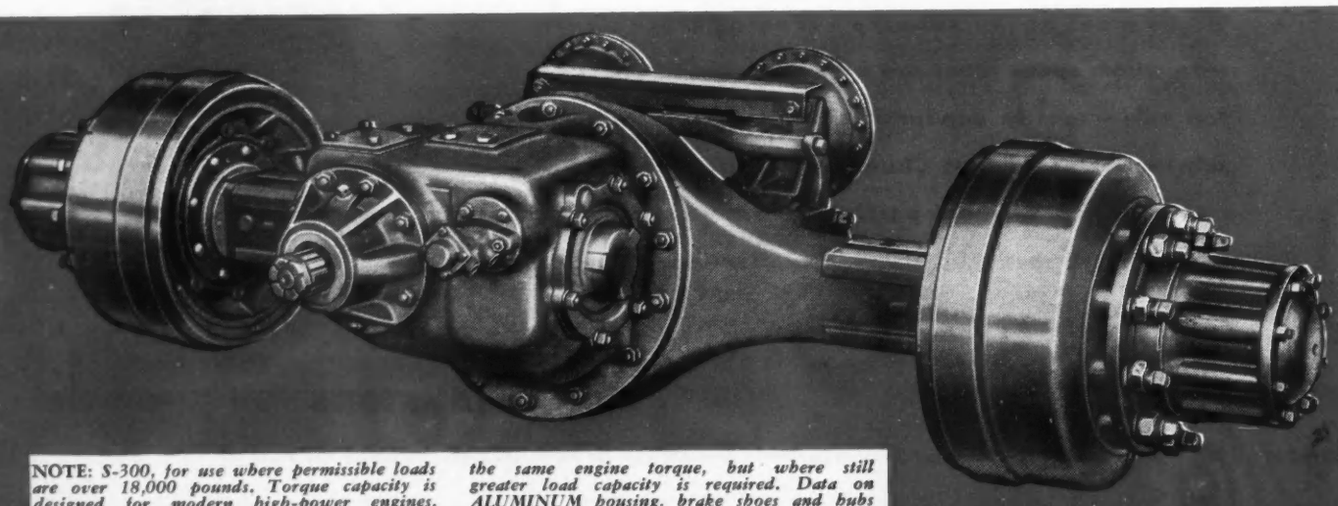
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The Accepted TIMKEN AXLES Standard

TIMKEN AXLES

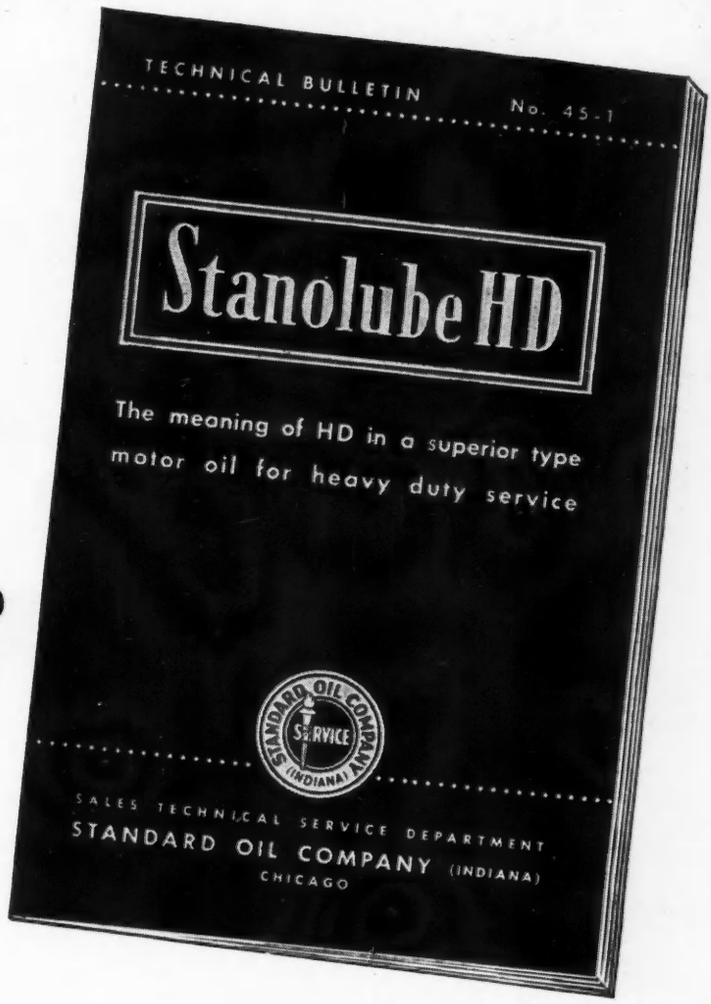
THE TIMKEN-DETROIT AXLE COMPANY, DETROIT 32, MICH.

WISCONSIN AXLE DIVISION OSHKOSH, WISCONSIN



NOTE: *S-300, for use where permissible loads are over 18,000 pounds. Torque capacity is designed for modern high-power engines. U-300, for off-the-highway operation using the same engine torque, but where still greater load capacity is required. Data on ALUMINUM housing, brake shoes and hubs for weight saving available upon request.*

HD motor oil facts that benefit every fleet operator



HERE are some of the questions that are answered and facts of interest to fleet operators covered in the 40-page, illustrated booklet shown above.

- What is a truly HD (heavy-duty) oil?
- How are HD qualities in oil measured such as: detergency, oxidation stability, and corrosion resistance?
- How does Stanolube HD compare with conventional oils and other HD oils, in the elimination of varnish, engine deposits, and corrosion? (Illustrations in full color, of engine parts operated under identical test conditions, show clearly the results you can expect *in your engines.*)

The booklet also includes details of the tests which are a part of the Army Specifications 2-104 B for approval of motor oil and the most reliable basis for comparing motor oil quality today.

You can get copies of this booklet from the Standard Oil Man who calls on you, or by writing Standard Oil Company (Indiana), 910 South Michigan Avenue, Chicago 80, Ill.

STANDARD OIL COMPANY (INDIANA) STANDARD SERVICE

America's Fleet Owners



TRUCK, bus and taxi fleet operators agree on the outstanding performance and economy of Auto-Lite Spark Plugs, Wire and Cable, Lights and Lens, Batteries. Conditions today make it essential to check performance records and operation costs more carefully than ever. Auto-Lite products have proved they stand up under the most extreme conditions—are original factory equipment on many of America's finest trucks, buses and tractors. It pays to replace with Auto-Lite.

AUTO-LITE MEANS PRECISION MANUFACTURING

CBS

THE ELECTRIC AUTO-LITE COMPANY

TOLEDO 1, OHIO TORONTO, ONTARIO

TUNE IN THE AUTO-LITE RADIO SHOW STARRING DICK HAYMES SATURDAYS 8:00 P.M.—E.T. ON CBS

AUTO-LITE MEANS THE

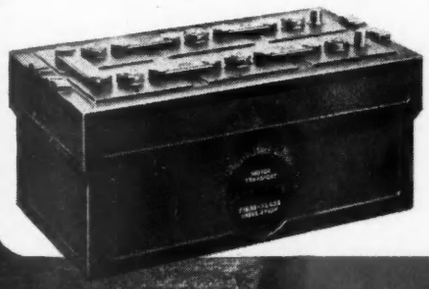
Prove it Again AND Again!

AUTO-LITE HEAVY DUTY SPARK PLUGS

Coast to coast fleet owners have proved the value and economy obtained by using top grade spark plugs, built especially for heavy-duty bus and truck operation. The result is that more fleets are switching to Auto-Lite Heavy-Duty Spark Plugs than ever before.



AUTO-LITE HEAVY DUTY BATTERIES

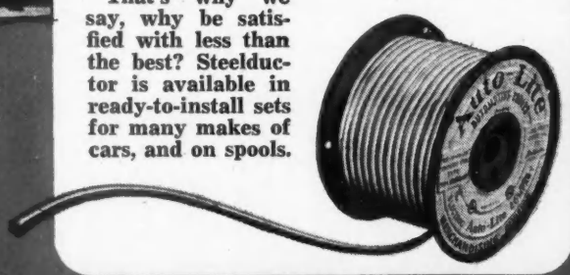


For quick starts, long life, dependable power and low cost operation put Auto-Lite Heavy Duty Batteries on the job in your fleet. The complete line, now available, includes batteries with the famous Auto-Lite Fiber-glas construction.

AUTO-LITE WIRE and CABLE

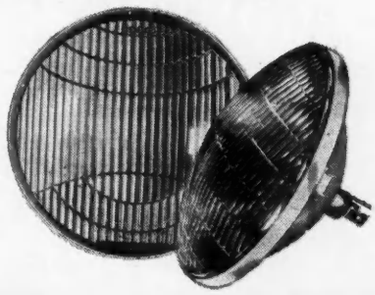
Now you can get the proven advantages of Auto-Lite Steelductor spark plug wire. Your supplier has it in stock right now. Used on the majority of American fighting planes, Steelductor has been proven, too, by trucks and buses operating in every state in the union.

That's why we say, why be satisfied with less than the best? Steelductor is available in ready-to-install sets for many makes of cars, and on spools.



AUTO-LITE LIGHTS and LENS

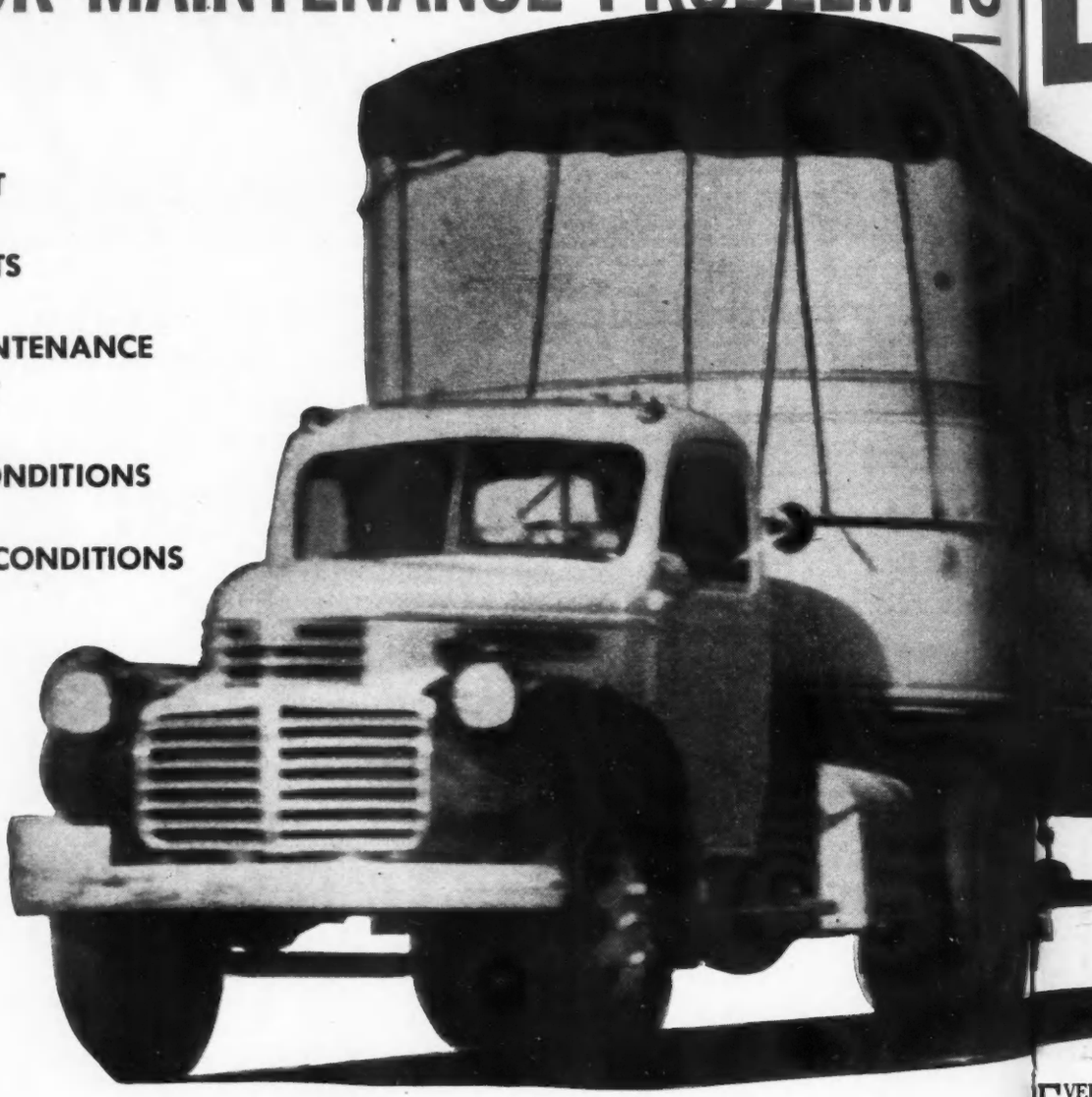
Auto-Lite sealed beam units, lens, fog and driving lights are designed for cars, trucks, tractors and buses. Separate bulb construction on Auto-Lite sealed beam unit keeps the light functioning even when the lens is broken.



LIFE-LINE OF YOUR FLEET!

YES! YOUR MAINTENANCE PROBLEM IS—

- SIZE OF FLEET
- TYPE OF UNITS
- SIZE OF MAINTENANCE DEPARTMENT
- WEATHER CONDITIONS
- OPERATING CONDITIONS



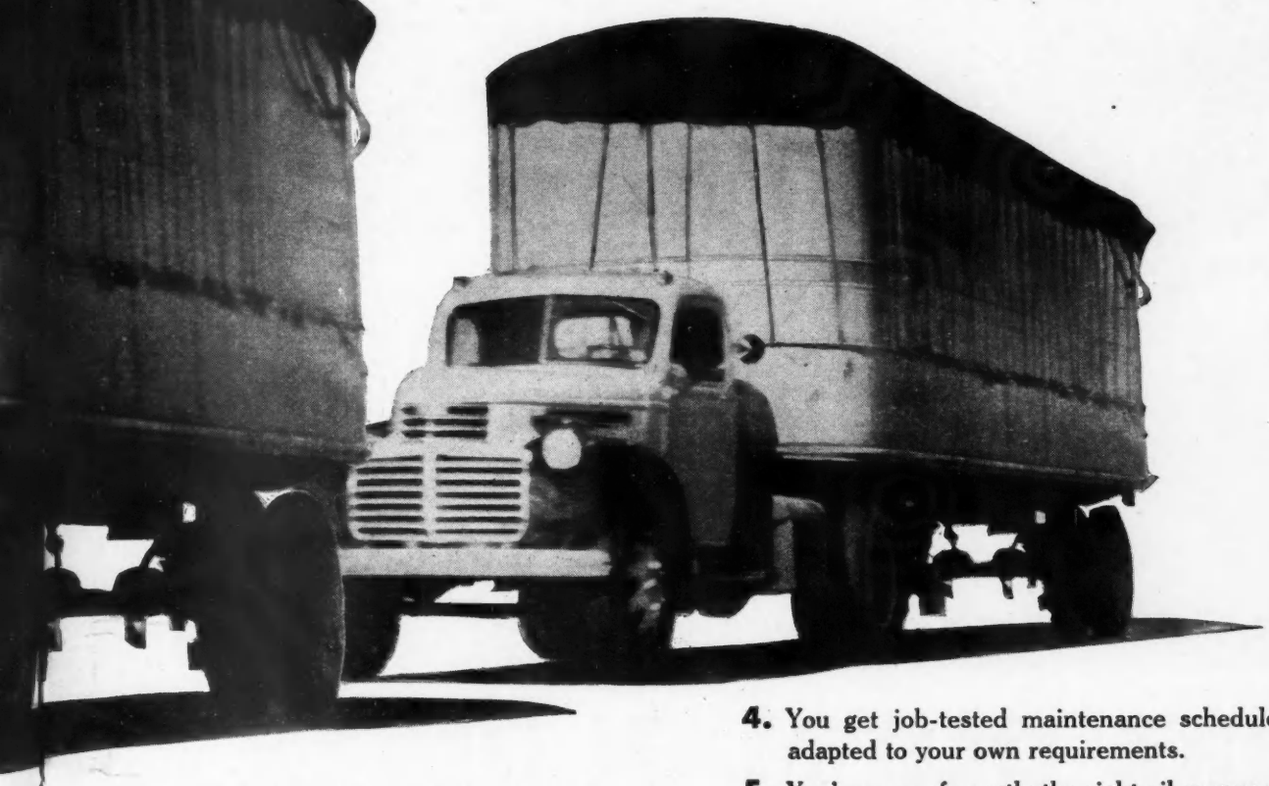
—AND HERE'S PERSONALIZED HELP

SOCONY-VACUUM

SOCONY-VACUUM

DIFFERENT"!

Because we realize no two fleets are alike, Socony-Vacuum Fleet Operators' Service is designed so that it can be adapted to fit your problem exactly—to meet all these varying conditions!



EVERY DETAIL of this plan is easily adapted to your specific needs, regardless of how your maintenance department is set up.

The Socony-Vacuum Representative who brings it to you is a trained lubrication man backed by tremendous resources. Here are some of the helps he offers:

1. Often he provides special instruments for "trouble-shooting."
2. When necessary, he calls in lubrication engineers to cure "problem" equipment.
3. Your men get help with shop layout to speed maintenance work.
4. You get job-tested maintenance schedules skilfully adapted to your own requirements.
5. You're sure of exactly the right oil or grease for every part of every vehicle you operate, with Socony-Vacuum's complete line of quality lubricants to draw on.
6. A system set up to assure your men of the latest technical information.

The Socony-Vacuum Representative is "on your staff but *not* on your payroll"—behind every one of his recommendations stands Socony-Vacuum's 80 years of research and experience in making oils and greases to fit specific needs. Investigate this Fleet Operators' Service today!

SOCONY-VACUUM OIL COMPANY, INC., and Affiliates: Magnolia Petroleum Company, General Petroleum Corporation of California

TUNE IN "INFORMATION PLEASE"—MONDAY EVENINGS, 9:30 E.S.T.—NBC

FLEET OPERATORS' SERVICE



LIKE OLD MAN RIVER

They just keep rolling along!

Kelly is *the trucker's tire!* Built in one of the most modern tire plants—up to the minute in materials, methods, design—it has something extra the trucking industry likes . . .

Ruggedness and dependability that reflect 52 years of tire craftsmanship!

Fleet records bear this out—show Kellys "keep on rolling" long after other tires are through.

Try the new Kelly. Test it against others if you like. It's completely redesigned to run cooler, with a new tread contour that relaxes rubber instead of stretching it. But *most important*, it has Kelly character, Kelly quality. It will "take it" and "take it" and come back for more!

THE KELLY-SPRINGFIELD TIRE CO.
Cumberland, Maryland



Fleet Records show "Kellys are Tough."

KELLY QUALITY COSTS LESS PER MILE!

KELLY *Springfield* **TIRES**



Big Payloads make Low Costs Per Mile

Operators of chain stores are smart merchandisers. Every factor of their business is appraised in the light of its ability to reduce costs. This is why precision-built Autocar Trucks are so outstanding in the chain store field. They're big trucks, superbly engineered by Autocar to carry big payloads at low costs per mile. Fisher Brothers Company, with 221 master markets and retail stores in Northeastern Ohio, own and operate a fleet of heavy-duty Autocar Trucks, with more on order. . . . The trend is to heavy-duty Autocars—by Autocar.

AUTOCAR TRUCKS

Engineered by Autocar

Manufactured in Ardmore, Pa. • Serviced by Factory Branches and Distributors from Coast to Coast

PROVED: THE TANDEM FOR TOUGH GOING



The TRUCTOR TANDEM Trailer Axle Assembly

This tandem grew out of a need. A nationally known oil company requested Trucktor, builder of Third Axles, to design an axle assembly for tank trucks to be used on long, fast runs over difficult country—a job previously done by railroad transportation. So successful was the new design that other haulers wanted it. The 10 features listed below tell why. Added up, they mean longer truck life, reduced wear, less repair and better protection for both vehicles and load. Write for additional details, today.

1 **RUBBER-MOUNTED, FULL FLOATING SPRINGS**—remain square with frame, thus prevent frame distortion and are not subject to braking strains or axle torsion, keep spring clips tight.

2 **SILENT SPRING SLIPPER ENDS** have aluminum slide blocks that take sliding wear, maintain tension at all times, eliminating rattle and noise.

3 **SPRING SLIDE BLOCK** has broad contact area which reduces wear.

4 **SPRINGS MOUNTED DIRECTLY UNDER FRAME** eliminate outboard bending force on frame. Also permit wider frame, give greater freedom to body and tank design. Lower center of gravity allows narrower tread dimensions.

5 **THROUGH TYPE FRAME** permits low overall frame height, aids stability.

6 **RUBBER MOUNTED Y SHAPED TORQUE ARM** permits more accurate axle location, provides better brake control, retains axle alignment, lengthens tire life, reduces brake squealing, absorbs braking shock.

7 **SIX POINT FRAME SUPPORT** lengthens frame life and distributes load.

8 **LOAD DIVIDING CHAIN AND SPROCKET** in trough of frame between spring ends provides long life and great flexibility.

9 **TUBULAR CROSS-SHAFT** of load divider forms oil reservoir. One filling each month amply lubricates main wearing parts.

10 **INTERNALLY LUBRICATED CHAINS** need only occasional re-lubrication.

Additional information furnished upon request.

Trucktor

THE TRUCKTOR CORPORATION
156 WILSON AVENUE NEWARK 5, N. J.

TRAILER AXLES

MADE BY THE MAKERS OF TRUCKTOR THIRD AXLES

AVOID RADIATOR TROUBLES

Rust ruins radiators

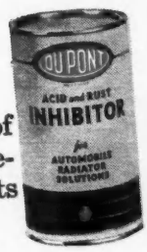




1 Clean rust out of the radiator with DU PONT COOLING SYSTEM CLEANSER

This simple precaution now, will probably eliminate trouble later. DU PONT COOLING SYSTEM CLEANSER actually dissolves rust, scale and grease. Cleans thoroughly without reverse flushing. Won't damage hose, packing or metal parts. Saves gas, insures against overheating.

2 Keep rust out with DU PONT ACID AND RUST INHIBITOR



After cleaning out the cooling system, pour in a can of DU PONT ACID AND RUST INHIBITOR. This prevents rust forming—prevents acid, too. One can lasts all season.

3 Make the cooling system leak-proof with DU PONT COOLING SYSTEM SEALER



You can keep the cooling system free from leaks by pouring in DU PONT COOLING SYSTEM SEALER. Will not clog the radiator or harm the parts.

DU PONT
REG. U.S. PAT. OFF.

NO. 7 LINE

BETTER THINGS FOR BETTER LIVING . . . *THROUGH CHEMISTRY*

CANOPY AND SIDE CURTAINS



Remember THIS RAMBLER SURREY?

It was "tops" in 1905, yet would make a mighty poor showing against any of today's models. And it's just as far a cry from the Rambler's old-time, inflexible, gravity fuel feed, to the responsive efficiency of . . .



AIRTEX

Factory Tested FUEL PUMPS

Properly hardened rocker arms, the hardening and precision grinding of rocker arm pins and correct spring tensions are among the important factors in AIRTEX Fuel Pump efficiency. Others of equal importance are the uniformity and accuracy of body castings, close tolerances on machined parts, the famous AIRTEX diaphragm and the rigid testing of all diaphragm assemblies for gas-tightness.

Assembled with AIRTEX Diaphragms Guaranteed for 50,000 Miles



"Airy" TEX says:
"Your profits climb with the AIRTEX Line"

AIRTEX AUTOMOTIVE CORPORATION, FAIRFIELD, ILL.

NSPA

NOW HOOD COMBINES ELECTRONICS WITH A NEW SYNTHETIC FORMULA



To Produce a Tire That's BETTER 5 WAYS

"LONGER running, Cooler running, Greater resistance to bruising!" — that's the story that has been true of Hood truck tires ever since the introduction, months ago, of electronically treated rayon in a *weftless cord* type of construction.

Now, in addition to weftless rayon cord, Hood tires are built with the amazing new synthetic rubber formula *GRS-10.*

This newest development in the perfection of man-made tire rubber gives you more for your money *5 ways:*

1. Tires made of GRS-10 run cooler
2. Run longer in heavy service
3. Slower tread wear
4. Greater resistance to tread cracks
5. Uniform quality

When you buy your next truck tires, remember these two points of superiority — *weftless rayon cord* and *GRS-10,* the new synthetic rubber, are combined today in Hoods. "If it's a HOOD tire it's an Extra GOOD tire."

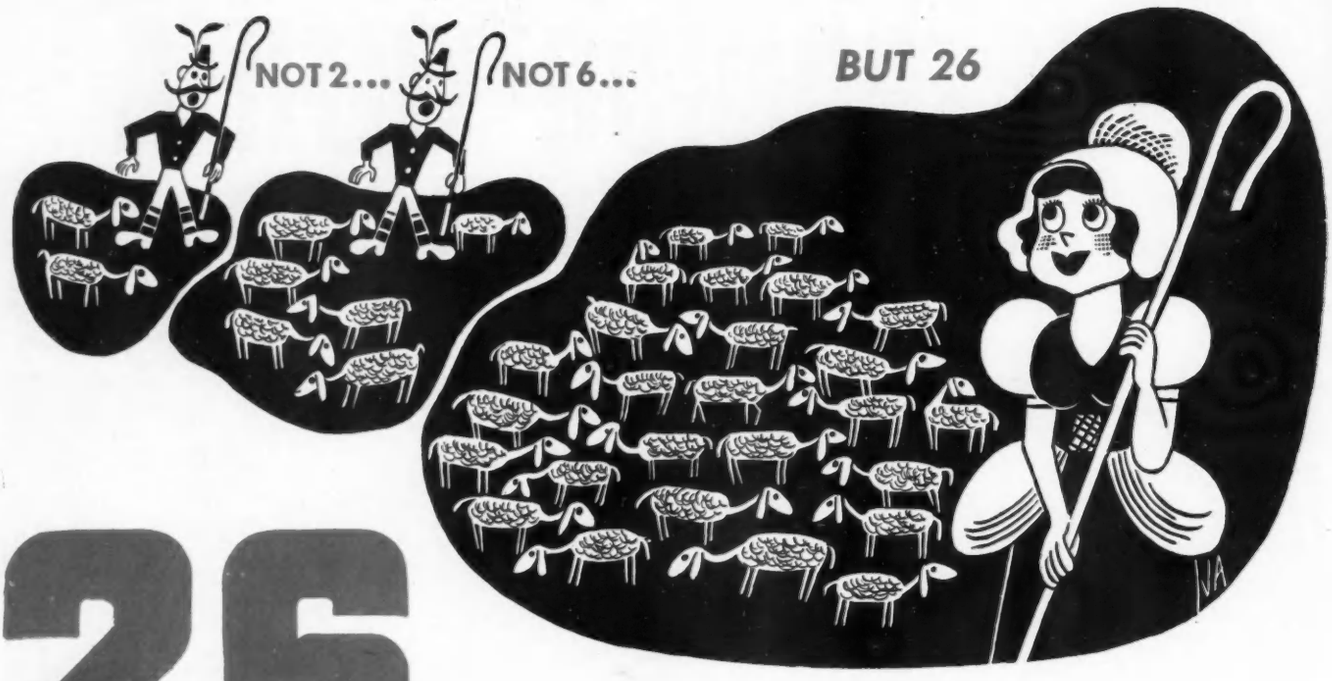
HOOD RUBBER COMPANY

A Division of The B. F. Goodrich Co.

Tire
Factories and Laboratories
Akron, Ohio and Los Angeles, Calif.

Footwear
Factories and Laboratories
Watertown, Mass.

For Blow-by Control, too



26 BASIC DESIGNS

of Sealed Power Piston Rings



INDIVIDUALLY ENGINEERED

ɔure, oil waste is bad for your fleet, and oil rings must be right for oil control. BUT blow-by control is important, too, and that means *compression* rings have to be right. With Sealed Power Individually Engineered Ring Sets, you are sure of *balanced performance*. Each set is selected from twenty-six (26) basic designs of rings. Whatever the make, model, or degree of cylinder wear, there's a Sealed Power Set specifically engineered to do the best possible job. Sealed Power has been refining these sets for six years, has been producing rings for car, truck and engine manufacturers 34 years. For balanced performance, re-power with Sealed Power motor parts. Sold by America's leading distributors. Sealed Power Corporation, Muskegon, Michigan and Windsor, Ontario.

Piston Rings, Pistons, Cylinder Sleeves, Piston Pins, Valves, Water Pumps, Bolts, Bushings, Tie Rods, Front End Parts.

SEALED POWER PISTON RINGS

BEST IN NEW TRUCKS! ★ BEST IN OLD TRUCKS!

Keep Your War Bonds! Get $4 for $3!

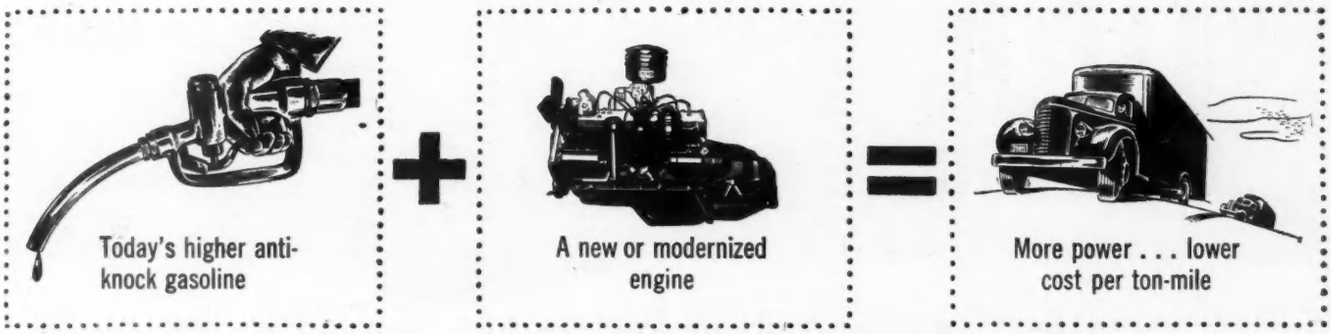
What you can do to **get more power** *from today's gasoline*

THE POWER'S THERE waiting for you in every gallon. To *get* that power and *use* it to lower your ton-mile costs, here's all you have to do:

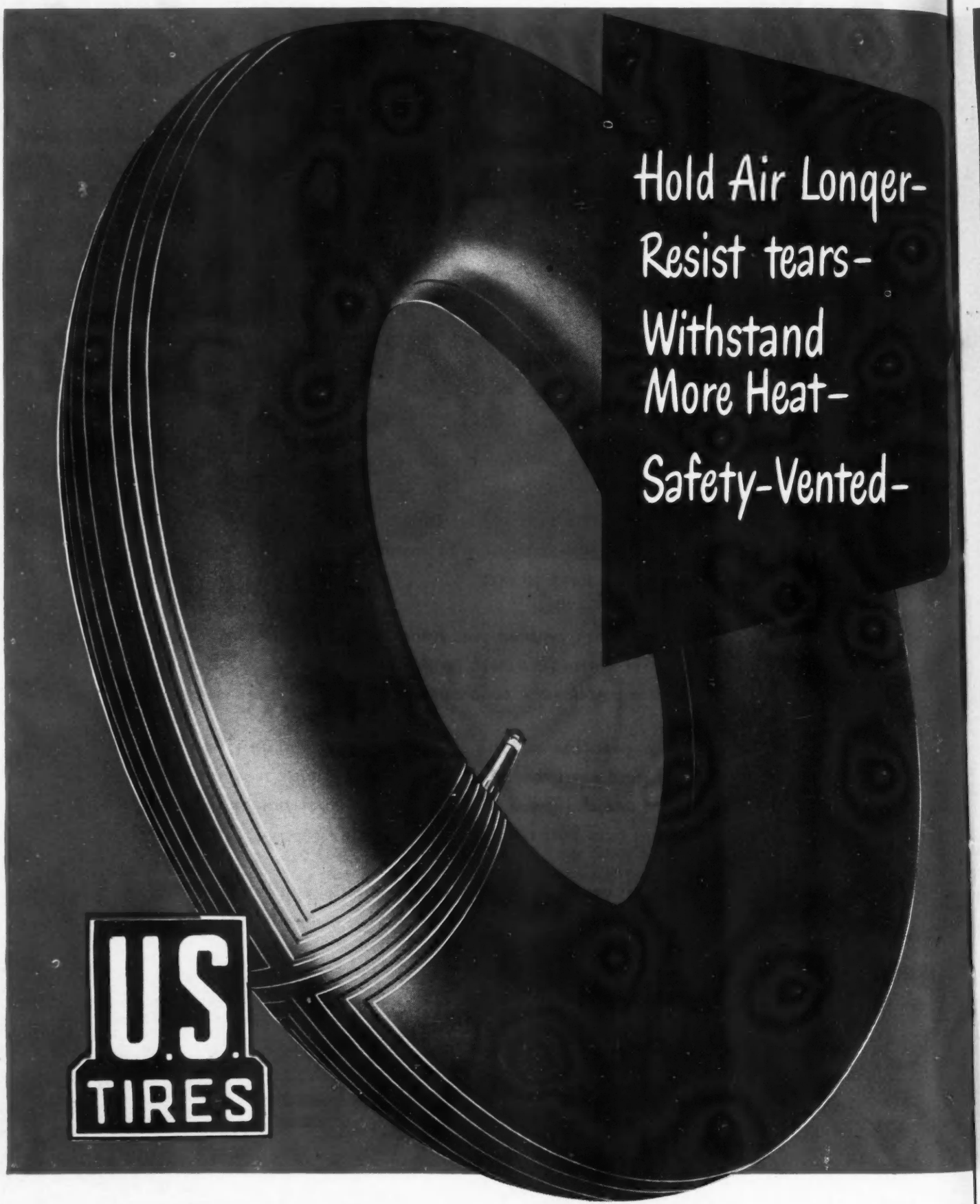
1. ***Check every engine you have in service and make sure it's modernized to take advantage of the higher antiknock value of today's gasoline.***

2. ***Keep gasoline octane ratings in mind when you buy new equipment and make sure your new engines are designed to squeeze the most power out of the fuel you use.***

If you keep up with gasoline improvements, you'll be better able to deliver more efficient service at lower cost.



ETHYL CORPORATION, *Chrysler Building, New York 17, N. Y.*



UNITED STATES

Listen to "Science Looks Forward"—new series of talks by the great scientists of America—on the Philharmonic-Symphony Program. CBS network, Sunday afternoon, 3:00 to 4:30 E.S.T.

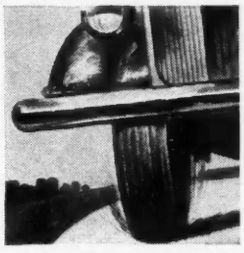
U.S. ROYAL BUTYL TUBES

The experience of truckers from coast to coast—the results of grueling tests in "U.S." laboratories—show new U.S. Royal Butyl Tubes far and away better than natural rubber in air retention, heat, tear and age resistance, and in consistent serviceability. Because the danger of under-inflation is minimized, new U. S. Royal Butyl Tubes increase tire life—add extra miles of trouble-free service at lower cost per tire mile.



HOLD AIR LONGER

U.S. Royal Butyl Tubes retain air far longer than tubes made of natural rubber. Inflation is more constant between pressure checks.



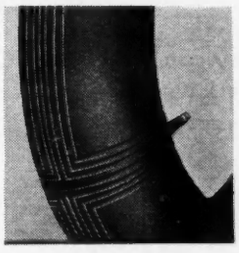
RESIST TEARS

U. S. Royal Butyl Tubes have higher tear resistance. Toughness of compound reduces splitting, tearing—makes repair easier.



WITHSTAND MORE HEAT

U. S. Royal Butyl Tubes have superior heat resistance. They minimize roadside delays on long, fast trucking runs.



SAFETY-VENTED

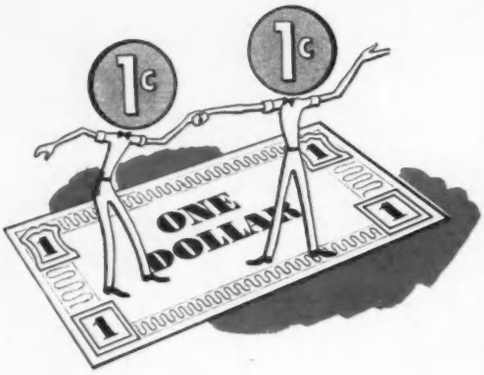
Exclusive "U.S." Safety-Venting allows release of air trapped between casing and tube, reduces danger of sidewall separation.

SPECIFY U. S. ROYAL BUTYL TUBES FOR LOWER COST PER TIRE MILE!

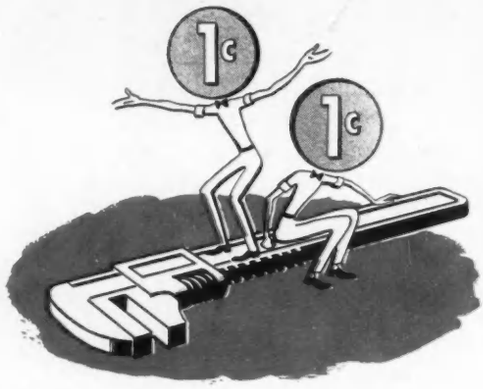
Phone Your U. S. Truck Tire Distributor Today!

RUBBER COMPANY

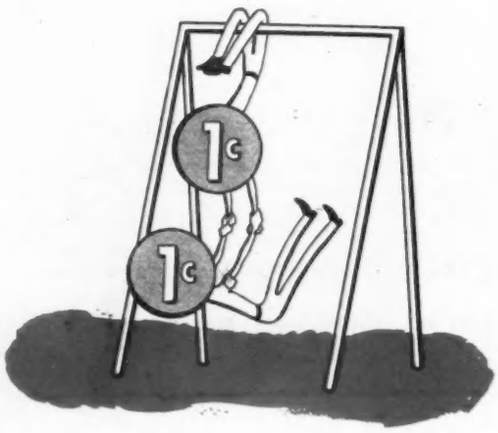
1230 AVENUE OF THE AMERICAS • ROCKEFELLER CENTER • NEW YORK 20, N. Y.



Oil *(even the very best oil) takes less than 2c out of every dollar of operating expense.*



Mighty two pennies! *They can definitely reduce repair bills caused by accumulation of hard carbon.* (And that includes many of the most common motor troubles.)*



They can penetrate! *Cling to vertical surfaces! Withstand the heat and pressure of high speed, heavy duty operation!**



And so give you more pay-loads per unit



...more profit from the fleet!*

***Prove it in your own equipment!** Macmillan Ring-Free motor oil IS different, unique, the only oil of its kind. Refined by an exclusive, patented process. Because it IS a better oil, we invite you to test it against any other brand in the world. We'll gladly help you arrange a dollars-and-cents test in your own equipment. Write, wire or phone the nearest Macmillan office.

MACMILLAN PETROLEUM CORPORATION • 50 W. 50th St., New York 20
624 S. Michigan Ave., Chicago 5 • 530 W. Sixth St., Los Angeles 14.

HIGH, HIGH FILM STRENGTH! LOW, LOW ENGINE DEPOSITS! LUBRICATES AS IT CLEANS!

Here it is

ASK FOR MACMILLAN OIL

THE LOW-MAINTENANCE OIL

WHY TAKE A DEAD BEAT

ORDINARY BATTERY
POWER-SAPPED
from being on the shelf



when you can get a **LIVE WIRE?**



GOODYEAR YKL BATTERY
POWER-FULL
because it's kept on constant power charge

PowR SavR keeps batteries at power-peak with a continuous trickle charge



It's a fact, new batteries are often tired even before they're ready to go to work. They're drained far short of their rated power, have fewer starts in them, just from resting on the shelf.

To be sure of a battery with its Sunday punch intact, get a Goodyear YKL — the only heavy-duty battery protected by the "PowR SavR." This automatic charger rack is a unique Goodyear feature that keeps the YKL at its power-peak until installed, gives you more sure starts to begin with.

YKL BATTERIES —for buses, trucks, tractors

PLUS { **Cushioned Power Construction that insures longer life**



Felted Fiberglas mats, placed between the YKL's plates, cushion them against jolting and jarring, provide maximum plate protection—the prime requisite for longer battery life.

So, remember these facts and make your next battery a power-*full* Goodyear YKL — for your full money's worth in starts and stamina.

YKL—T.M. The Goodyear T. & R. Co.

GOODYEAR

THE GREATEST NAME IN RUBBER



HERE'S THE TOOL BOX JACK THAT'S GOT EVERYTHING

WALKER

SERIES 900

- A CAP THAT CAN TAKE THE RAP
- A RAM WITH SOLID END TO PREVENT BENDING
- CUP LEATHERS THAT WEATHER 10,000 LBS. PRESSURE
- AN OIL TANK WITH EVEN THE AIR ENGINEERED
- A PENDULUM-BALANCED HANDLE SOCKET
- "RYTH-MATIC" VALVE ACTION THAT MAKES OPERATION EASY
- A BASE OK'D BY X-RAY
- PARTS THAT FIT WITH CAT WHISKER ACCURACY
- FILLED WITH HYDROYL-50...NON-CORROSIVE, HYDRAULIC JACK "OIL-ALLOY"

The Famous Walker Series 900 Portable Hydraulic Jacks —from 3 to 50 tons capacity

When you buy a Walker Series 900 portable hydraulic, you get more than "just a tool box jack." You get as fine a piece of lifting equipment as modern engineering and production can build. You get all the quality and refinement that a third of a century of *Know-How* can bring to a jack. Walker 900's do *what* you want done, *when* you want it done.



WALKER MANUFACTURING COMPANY OF WISCONSIN • RACINE, WISCONSIN

Also Makers of Electric Lifts and Exhaust Silencers

WALKER LEADS IN JACKS

FOR UTMOST RELIABILITY IN THE HEART OF THE FUEL SYSTEM



AVAILABLE FROM THE AC WHOLESALER

Your AC Fuel Pumps give you such dependable service and long life because *highest quality is built in,* from blueprints to finished products. There is one sure way to protect that reliability and durability,—insist upon AC pumps and parts.

FOR REPLACEMENT—install new AC Fuel Pumps or Authorized Factory Rebuilt AC Fuel Pumps.

FOR REPAIRS—use AC Diaphragm or Parts Kits.

QUALITY FEATURES

- Careful control of pressure and flow assuring correct fuel supply.
- Accurate hardening, precision machining of parts essential to long life.
- Accurate control of spring tensions and temper.
- High, and controlled, pin hardness.
- 4-layer patented-impregnation diaphragms of special airplane cloth.
- Carefully finished rocker arm pads, located to center on cam.
- Split-hair rocker arm clearance and control of pad hardness.
- Uniform pull rod hardness at pin holes.

AC

FUEL PUMPS

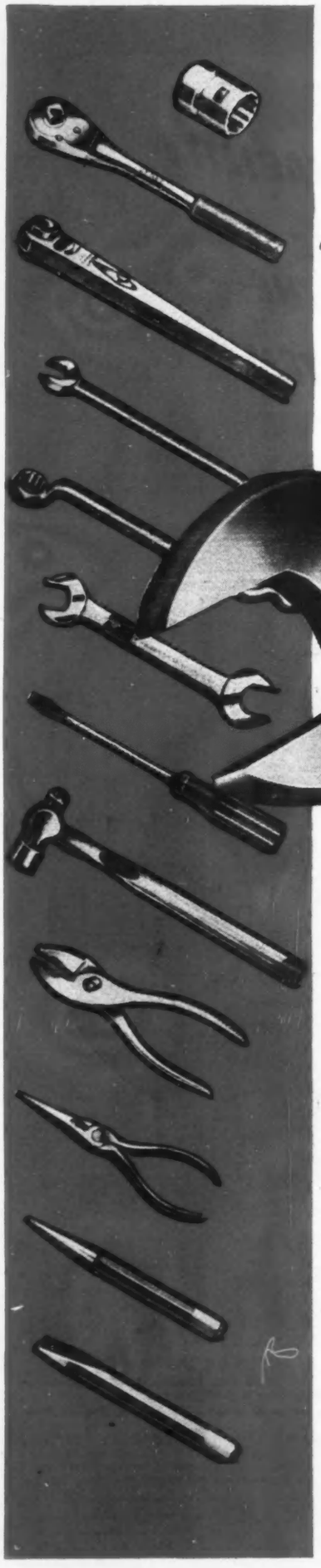
SEND FOR AC SHOP MANUALS

Field Service Department, AC Spark Plug Division, G. M. Corporation
910 Mott Foundation Building, Flint 3, Michigan

Gentlemen: Please send at once, no charge, the AC Shop Manuals checked:

☐ How to Service Spark Plugs ☐ HOW TO SERVICE FUEL PUMPS
☐ How to Service Spark Plug Cleaner ☐ How to Service Air Cleaners
☐ How to Service Oil Filters ☐ How to Service Speedometers
☐ How to Service Ammeters and other instruments CGJ-2

NAME_____
FIRM_____
STREET ADDRESS_____
CITY_____ STATE_____



BONNEY "Balanced Design" OPEN END WRENCHES

Every mechanic recognizes the "feel" of good wrenches—wrenches that are not awkward—that are easy-on-the-hands—that are thin and light, yet strong enough for tough, hard use.

All these qualities are the result of Bonney's "Balanced Design." It starts with the selection of the right steel to provide maximum strength with minimum weight, and ends with durable, attractive plating. In between, every step in the designing, forging, machining and heat-treating of Bonney Tools is aimed at making them the Tools that mechanics like best.

Ask your nearby Bonney Tool Distributor or Jobber to show you the complete line of Bonney "Balanced Design" Tools—or write for a copy of the new Bonney Tool Catalog.

BONNEY FORGE & TOOL WORKS
635 N. Meadow St., Allentown, Pa.
In Canada: Gray-Bonney Tool Co., Ltd., St. Clarens & Royce Aves., Toronto
BUY MORE BONDS AND KEEP THEM





OSHKOSH

KEEPS NEW YORK TRAFFIC MOVING

IN New York State — — on county, state and town highways — — more than 260 OSHKOSH snow removal units are keeping traffic moving this winter.

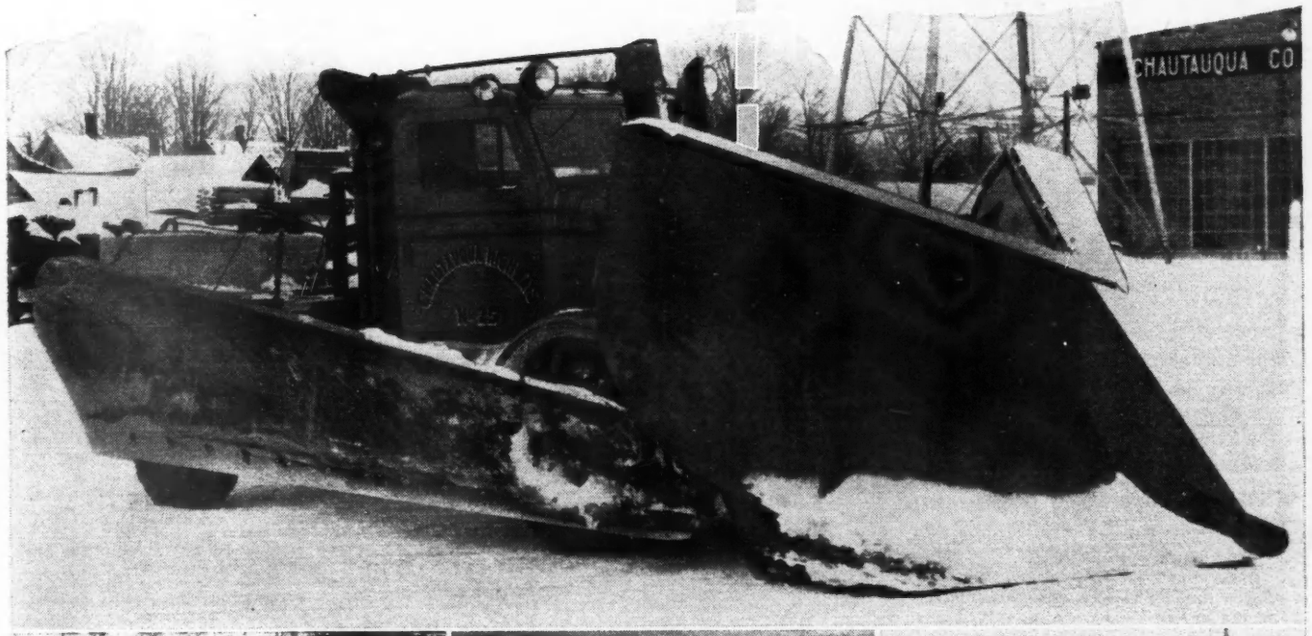
Throughout the U. S. snowbelt, for more than a quarter-century, Highway Departments have depended upon the sure-footed four-wheel-power of OSHKOSH snow removal equipment. It not only goes through where others "fear to tread," but it is also so ruggedly built it keeps on year after year with comparatively little upkeep expense.

OSHKOSH is efficient, economical year-around equipment — — snow removal in winter — — construction, maintenance and all kinds of long and short haul jobs during the rest of the year.

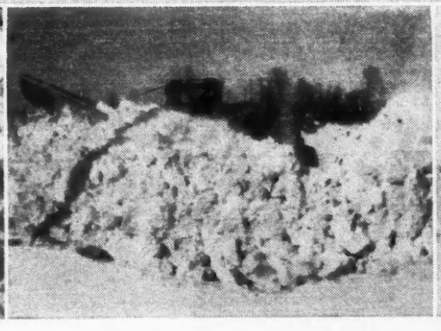
OSHKOSH MOTOR TRUCK, INC.
OSHKOSH, WISCONSIN

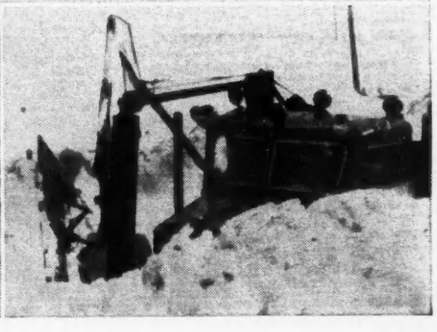
CABLE ADDRESS: "OSHMOTOR" OSHKOSH











YOU CAN'T BEAT *All-Wheel-Drive*



FOR TRANSPORTATION'S TOUGHEST JOBS

Marmon-Herrington *All-Wheel-Drive* Trucks enter the picture where other trucks fade out. With live power and traction applied to *all wheels,* they are specifically designed to move maximum pay loads over and through places that leave conventional-drive trucks gasping in their tracks.

For 1946, Marmon-Herrington offers two new, importantly improved Heavy-Duty *All-Wheel-Drive* Trucks. More rugged, more powerful, more efficient than ever before, these new models have "everything it takes" to buck and conquer the worst that nature has to offer—deepest mud, sand and snow, steepest hills and mountain trails.

Important features in the 1946 models include: 4- or 6-wheel drive—greater approach angle—low center of gravity—wide range of gear ratios—safe, easy-action steering—powerful, positive-grip air brakes—rated gross capacities up to 37,000 pounds —and many other advantages.

Discover how these great new Heavy-Duty *All-Wheel-Drive* Trucks, or Marmon-Herrington *All-Wheel-Drive* converted Fords, can solve your toughest transportation problems. See your near-by Marmon-Herrington distributor, or write company direct.

MARMON-HERRINGTON COMPANY, INC. • INDIANAPOLIS 7, INDIANA

Road Building and Maintenance
Great power and traction for moving heavy loads through mud, dirt, sand, gravel. Available with underbody blades for grading, etc.

Snow Removal
Sure-footed *All-Wheel-Drive* tractive power assures fast, efficient removal of heaviest snow. Adapted to either blade or rotary plows.

Oil Field Service
Unexcelled for transporting oil machinery and equipment, including derricks and pipe, to and from locations—regardless of terrain.

Public Utility Service
Ideal for both on- and off-the-road operations. Available with winches, derricks, earth borers, etc., for every type of public utility construction and maintenance work.

Logging, Mining, etc.
Rugged strength and *All-Wheel-Drive* power combine to handle the back-breaking loads these operations demand, both on the road and off.

MARMON-HERRINGTON *All-Wheel-Drive Trucks*





Low repairs in tough oil field hauling *prove* DIAMOND T *reliability*

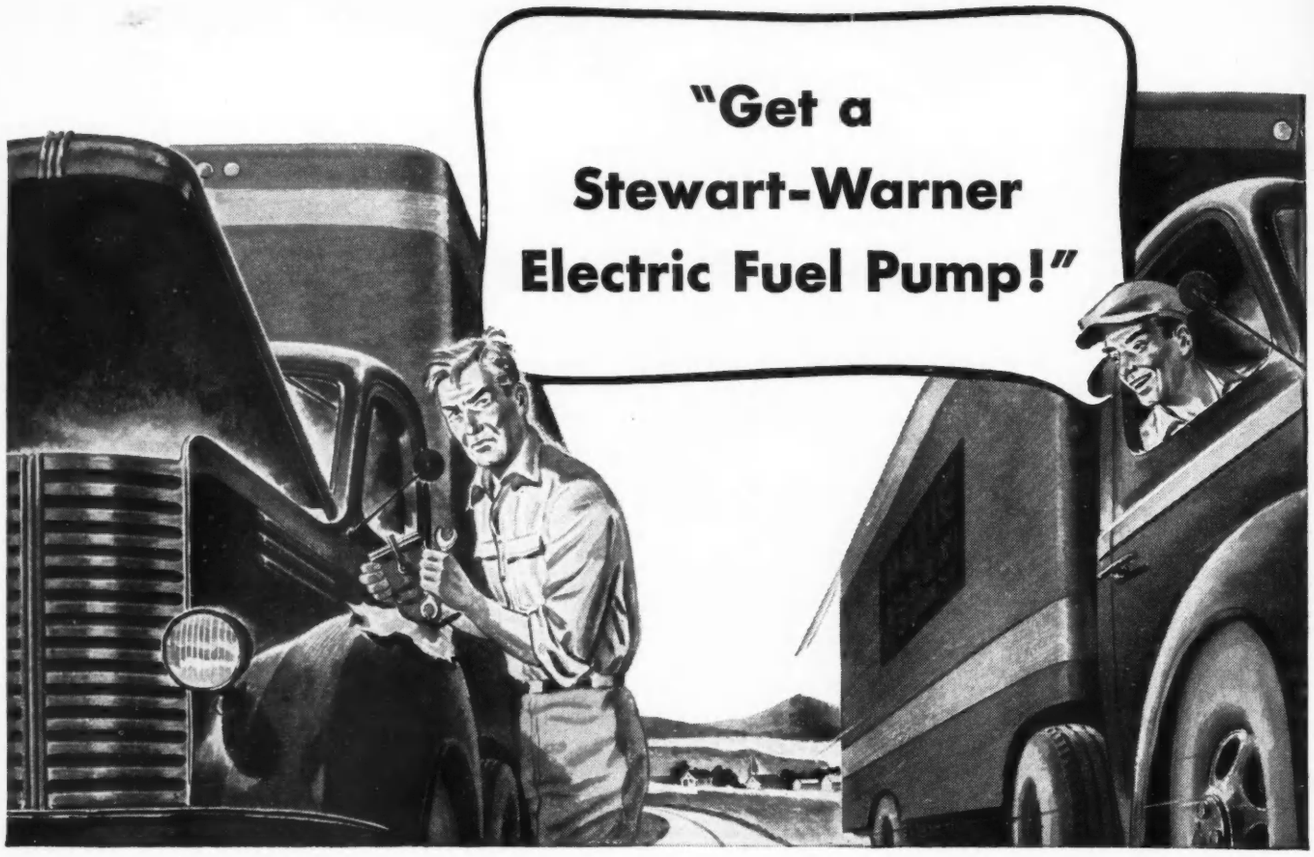
THIS oil well location is so bad that it's good for motor trucks. It's a Louisiana swamp, so deep that a foundation and plank road had to be built. It is the exception—most oil field hauling is heavy for loads and brutal for roads.

In this grueling service, E. J. Duplantis, prominent oil equipment hauler of Houma, La. reports: "After two hundred thousand miles my Diamond T had been so economical on repair that I was glad to buy three more. These have now done some 40,000 miles each in five months with no repairs." Good experience, but not unusual, because Diamond T has always built for "heavy-duty."

Diamond T research and pioneering continue. New and improved Diamond T commercial trucks are already in volume production for all types of service. *See your Diamond T dealer!*

DIAMOND T MOTOR CAR COMPANY, CHICAGO
Established 1905

DIAMOND T TRUCKS



AVAILABLE NOW! End Vapor-Lock and Fuel Pump Failure that Cost You Money and Time!



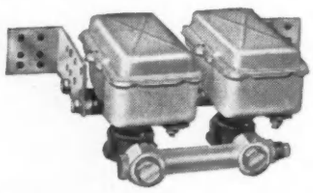
Doesn't beat itself to death. Operates only when needed. Delivers 15 gallons per hour on an average of one ampere of current.

• Get yours *now!* This famous fuel pump pushes fuel to the carburetor under constant pressure. In so doing, it eliminates vapor-lock by pushing the vapor pocket out of the fuel line.

It's a "smooth operator"—doesn't pound or beat itself to death—lasts longer with less maintenance. And the diaphragm of tested and proved Du Pont Fairprene simply won't wear out.

There's no fire hazard. Stewart-Warner contact points are sealed in a hydrogen filled tube and are operated and controlled magnetically The hydrogen keeps the points cleaned automatically—greatly reduces burning, sticking and pitting. This exclusive feature is approved by Underwriters' Laboratories.

Install Stewart-Warner Fuel Pumps as replacements or as auxiliary "safety" pumps for heavy-duty operation. No rotating parts, no piston, no bearings to fail. Stewart-Warner Corporation, 1876 Diversey Parkway, Chicago 14, Illinois.



• Use Stewart-Warner Dual Electric Fuel Pumps where gas consumption is high—gas mileage lower than average. Dual pumps more than double the life of each pump. Can be installed so that each pump operates independently.

STEWART-WARNER
ELECTRIC FUEL PUMP
STEWART-WARNER CORPORATION

Another Product of STEWART WARNER



FEDERALS HAVE WON

By Costing Less to Run!

● Heavier wear and tear on motor trucks throughout the war years . . . the urgent need to handle more—faster—helped furnish users and operators alike with a yardstick to more accurately measure performance and in-built values. Today these same men are capable of judging trucks more critically than ever before.

We like that!

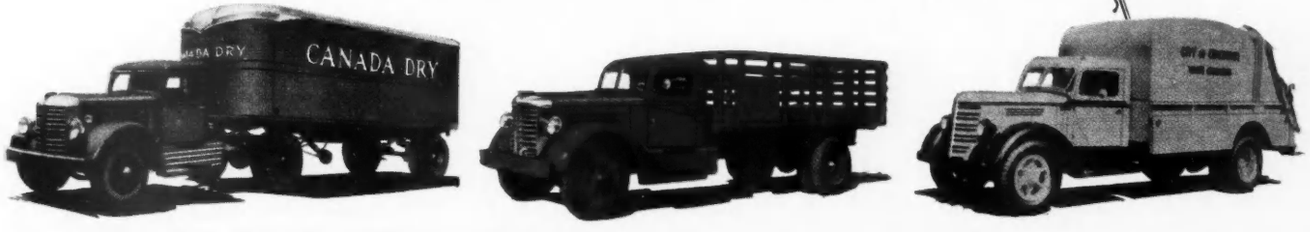
Because, during that period, Federal Trucks stood up to the toughest kind of punishment and established an enviable record for efficiency, sturdy performance and all 'round lower operating costs. By consistently offering a wide range of motor trucks in varied tonnage capacities, Federal can accurately match truck to specific job needs. No matter how tough or rugged your peace time problems of truck transportation may seem, you'll find Federal units skillfully engineered and built to last for years.

Consult your Federal dealer—get the added reliability and long-lived economy from trucks built to *your* specific transport requirements.

Federal is proud of its war production record, having been cited four times for meritorious achievement in building trucks for the Armed Services.



FEDERAL MOTOR TRUCK CO. • DETROIT 9, MICHIGAN



FEDERAL TRUCKS

Since 1910 . . . Known in Every Country—Sold on Every Continent



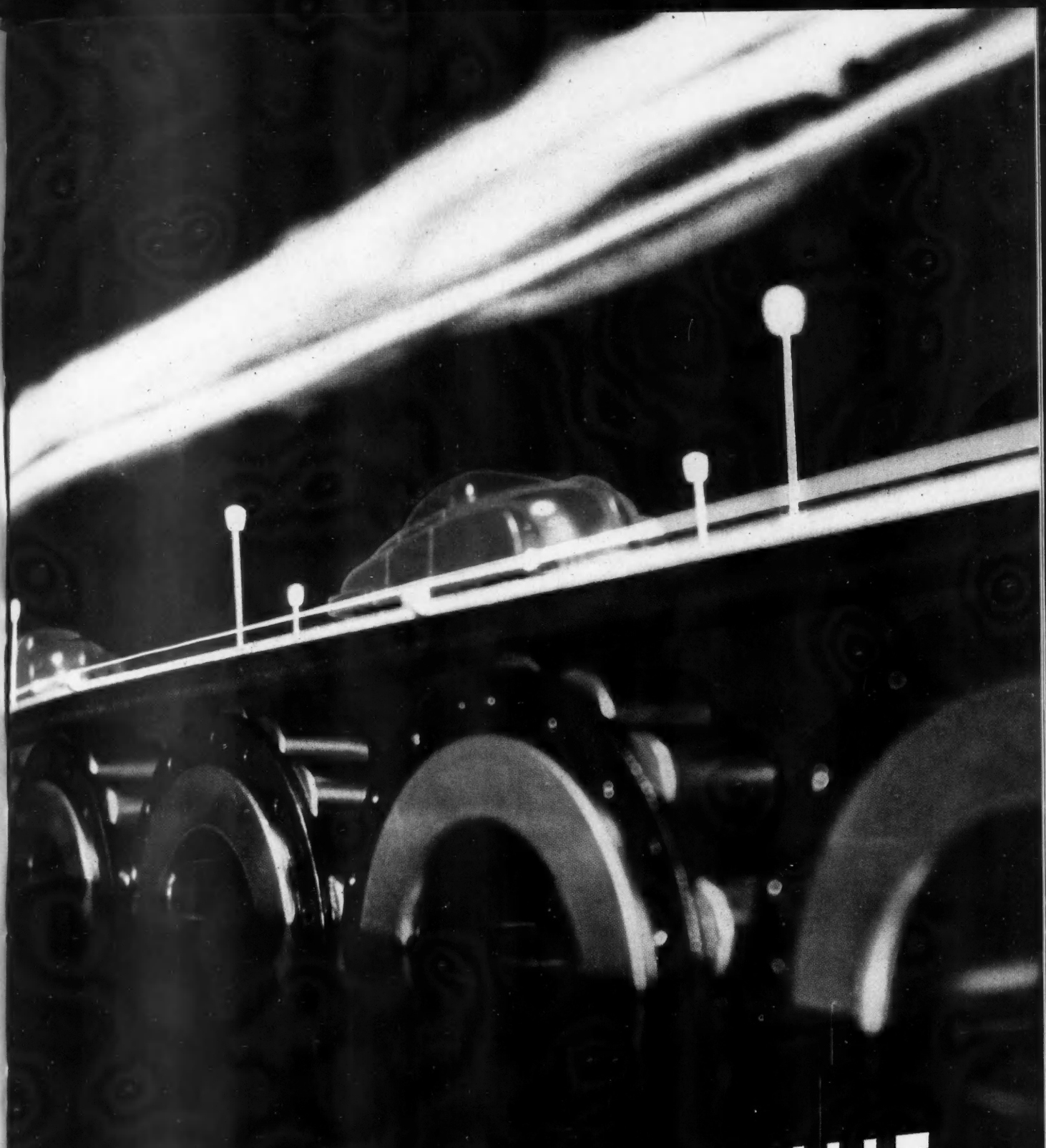
LONG

CLUTCHES • RADIATORS • OIL COOLERS

Pattern for Cooling Efficiency

Since 1903, Long has built radiators for the automotive industry in the precise patterns required for highest cooling efficiency. Into every Long radiator—for car, truck, bus, farm machine—goes the knowledge gained in 42 years and the precise workmanship of Long craftsmen.

LONG MANUFACTURING DIVISION
BORG-WARNER CORP., DETROIT 12 AND WINDSOR



THE BRIDGE OF BEARINGS THAT BOWER BUILT

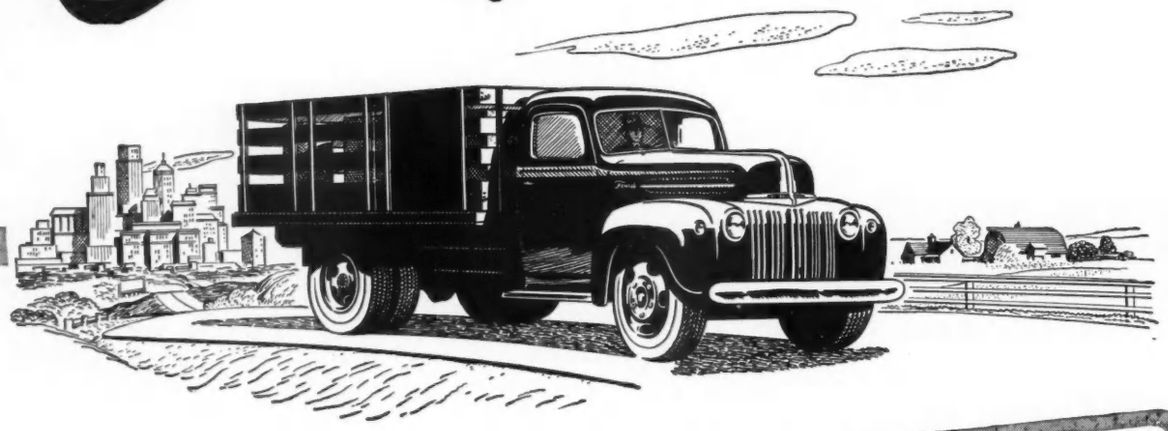
Under the swift moving traffic of the world, millions of Bower Roller Bearings form a magic bridge that bears the rolling loads of automobiles, motor trucks, tractors, planes, and many other types of transportation equipment. And in the years to come new and better forms of such equipment will roll on new and better Bower Roller Bearings.

BOWER ROLLER BEARINGS

Ford

FORD TRUCKS

Everywhere!



✓ 32 IMPORTANT New ENGINEERING ADVANCEMENTS

•

✓ 51 BODY AND CHASSIS COMBINATIONS

•

✓ TWO GREAT FORD ENGINES— THE 100 H.P. V-8 and the 90 H.P. SIX

because of

LOW INITIAL COST

LOW OPERATING COST

LOW MAINTENANCE COST

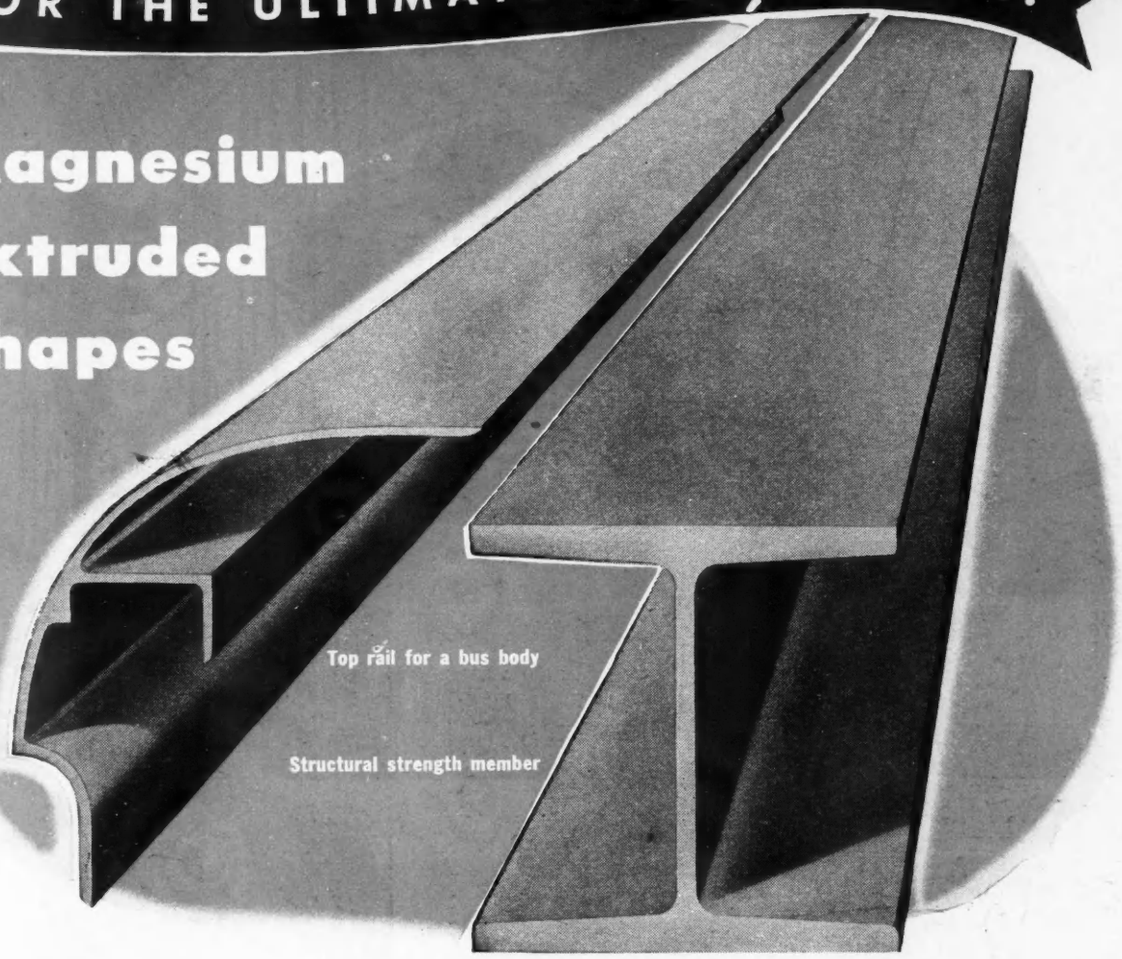
Availability of Service and Parts-

Everywhere, Quickly

SEE YOUR FRIENDLY FORD DEALER

FOR THE ULTIMATE IN *Lightness..*

Magnesium Extruded Shapes



Couple the extrusion method of manufacture with the natural lightness and high strength of magnesium for a weight-saving combination that's hard to beat. Magnesium extruded shapes let you achieve the ultimate in lightness with safety and economy.

In extruded magnesium shapes, the metal can be placed exactly where needed. No wasteful, weight-adding excess to satisfy the limitations of a manufacturing method. Note how the bus toprail section pictured above provides for its own assembly into the structure and for addition of top and side sheets. The necessity for building up sections by riveting or welding is avoided.

Magnesium extruded shapes and other magnesium products are now available through American Magnesium Corporation. Our representatives will gladly assist you in meeting your requirements.

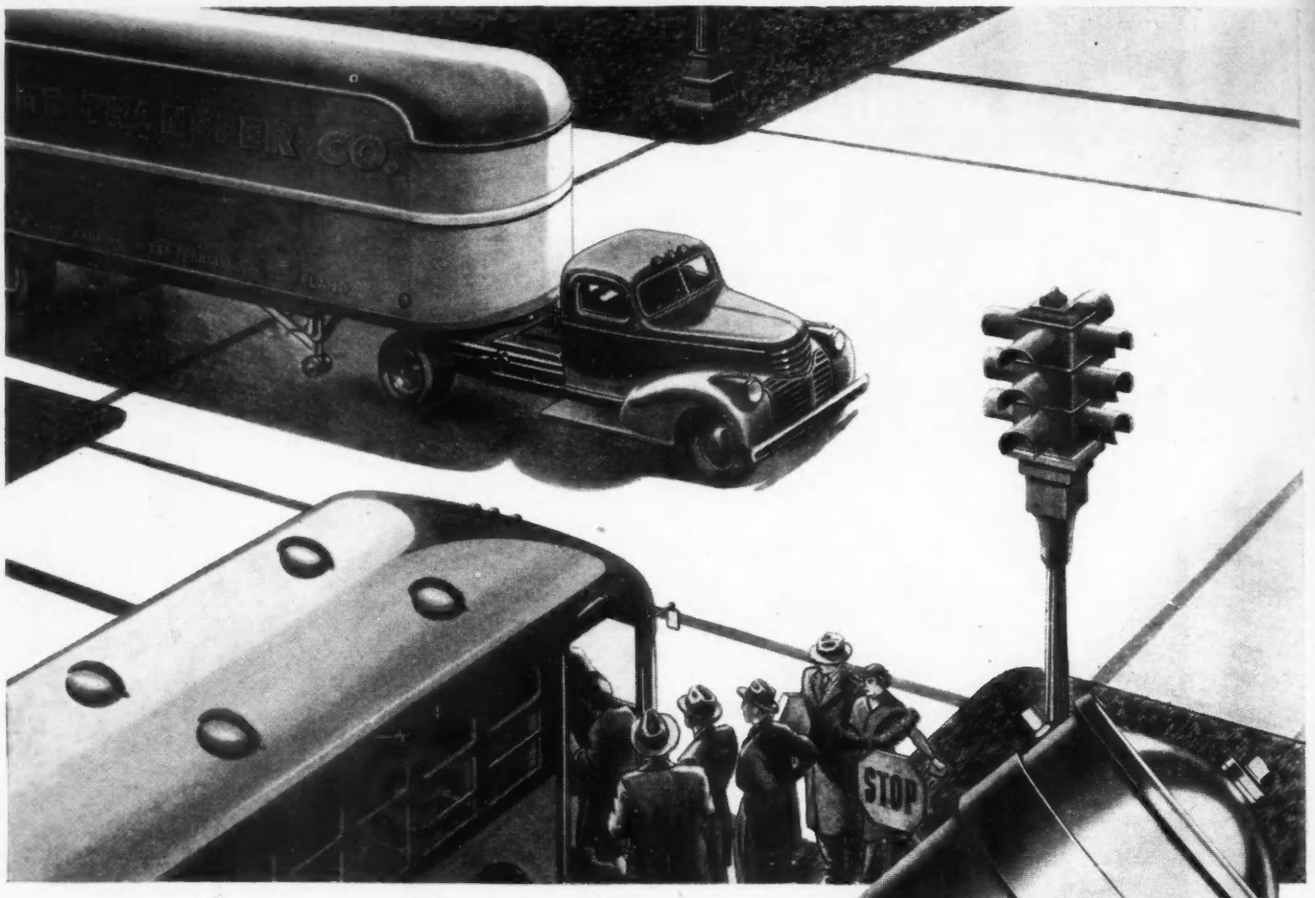
Aluminum Company of America (Sales Agent for American Magnesium Corporation) 1719 Gulf Building, Pittsburgh 19, Pennsylvania.

MAGNESIUM MAZLO PRODUCTS

REG. U.S. PAT. OFF.

AMERICAN MAGNESIUM CORPORATION

SUBSIDIARY OF ALUMINUM COMPANY OF AMERICA



Dirty Work
AT THE CROSSROADS

Dirty oil does its dirty work at every crossroad and on every mile of highway traveled by your trucks and buses. It clogs ring slots, makes valves stick, carries grit to moving parts, steals power, runs up repair bills.

You can stop this "highway robbery" with AC Oil Filters and Replacement Elements, saving their cost many times over, because they take the dirt out and *keep* it out.

If you already have oil filters, try the AC Replacement Elements, whose many quality features enable them to clean oil *better.* And if your engines are not equipped with oil filters, they *need* them—and AC Oil Filters will give them the maximum in engine protection.

SEND FOR AC SHOP MANUALS

Field Service Department, AC Spark Plug Division, General Motors Corporation
910 Mott Foundation Building, Flint 3, Michigan

Gentlemen: Please send at once, no charge, the AC Shop Manuals checked:

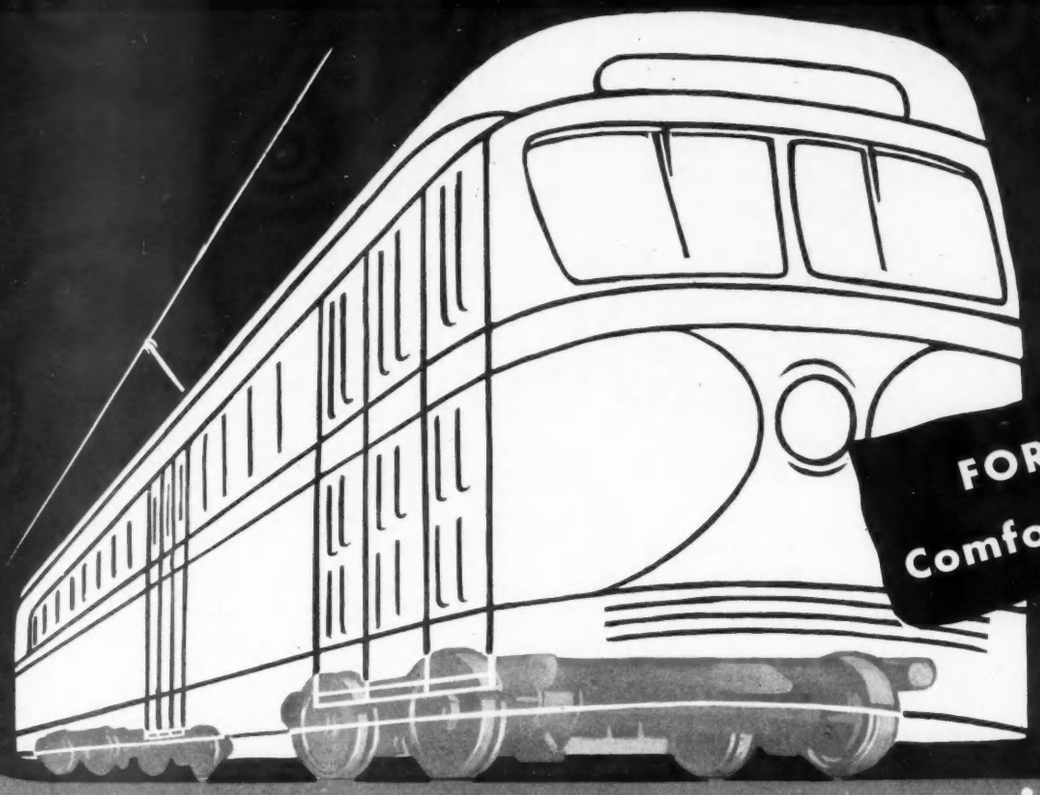
- ☐ How to Service Spark Plugs
- ☐ How to Service Fuel Pumps
- ☐ How to Service Spark Plug Cleaner
- ☐ How to Service Air Cleaners
- ☐ HOW TO SERVICE OIL FILTERS
- ☐ How to Service Speedometers
- ☐ How to Service Ammeters and other Instruments

CCJ-2

NAME_____
FIRM_____
STREET ADDRESS_____
CITY_____ STATE_____



OIL FILTERS



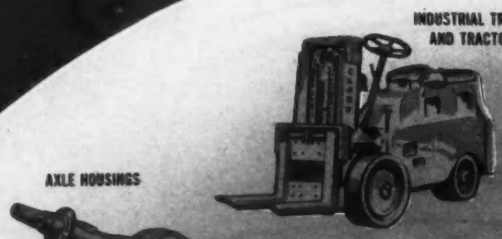
FOR *Quiet*
Comfortable ridin

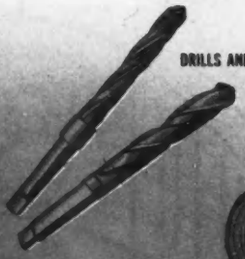
CLARK railway CAR TRUCKS



A wholesome tonic to patronage and revenue — *because it's quiet,* smooth... Rubber insulated wheels... Hypoid gearing... Hydraulic shock absorbers... easy riding springs... minimum unsprung weight... precision workmanship.

SEE OTHER SID







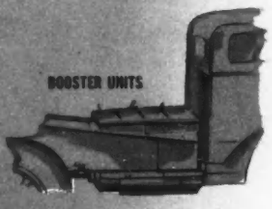


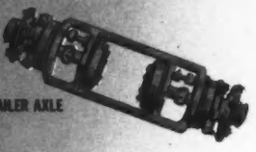


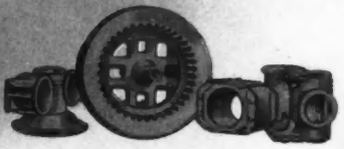




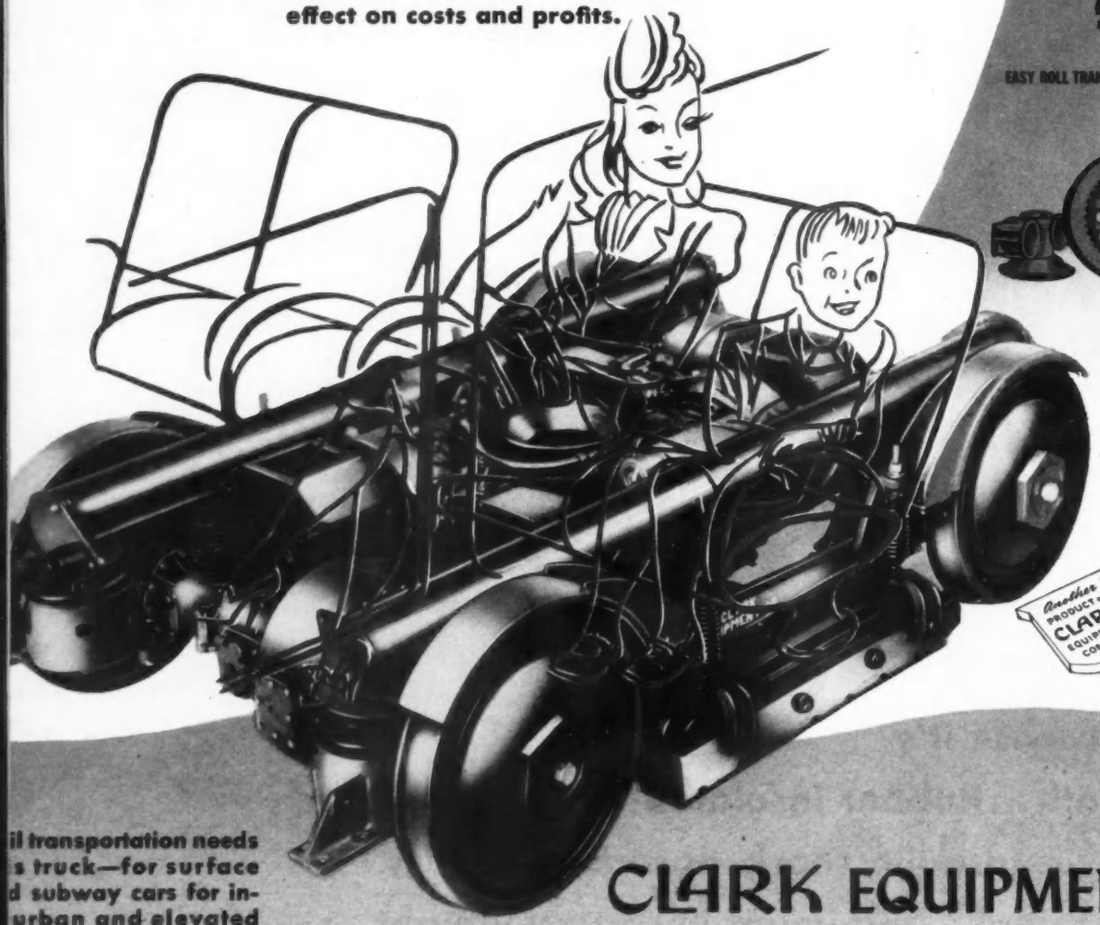








There's been much talk for many years about the "new day" in store for transit patrons—fast, smooth, quiet riding. It is here—now: a transportation dream brought to reality by the PCC Cars and the trucks on which they run—fast, smooth, quiet transportation. Clark engineers participated in the painstaking study and development work which created the PCC truck; and Clark is the original builder of that revolutionary unit. ★ Car patrons prefer the PCC cars—a preference that does pleasant things to revenues. And maintenance departments prefer Clark trucks—with equally favorable effect on costs and profits.



Another PRODUCT of CLARK EQUIPMENT COMPANY

il transportation needs
s truck—for surface
d subway cars for in-
urban and elevated
uipment—And a good
rt is for transportation
ecutives to talk to
irk engineers.

CLARK EQUIPMENT COMPANY

RAILWAY DIVISION • Battle Creek, Michigan

Also—BUCHANAN—JACKSON—BERRIEN SPRINGS, MICHIGAN

Goodby BRAKE LAG—HERE'S POSITIVE CONTROL!

HYCON

Compound CYLINDER

Eliminates Vacuum "Boosters" on Trucks and Busses



Look for this registered trade mark

The single HYCON unit does hydraulically the combined jobs of fluid-vacuum-air brake systems; gives greatly improved braking control. With HYCON, *all* pressures are *hydraulic* pressures. In direct proportion to pedal pressures, they always deliver the exact amount of power to meet load or no-load conditions, whether motor is running or not. The secret of this *controlled braking* is in a *second piston*—hydraulic, *not* atmospheric—contained in the single HYCON *compound* cylinder.

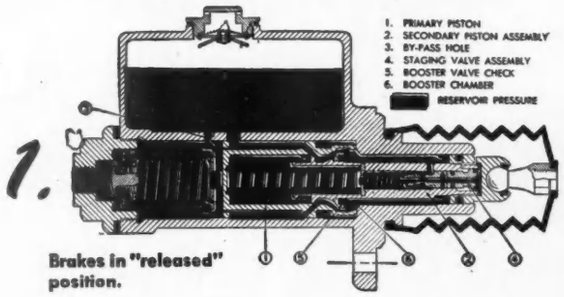
Simpler, Safer, More Economical

The greater *safety factor* in HYCON braking results from quicker stopping; better control. *Savings* begin with installation . . . first cost is less . . . reduced fuel consumption and tire wear . . . no air-vacuum parts to be serviced. The unit occupies no more space on the chassis than the original equipment cylinder; requires no additional tubing, and can be installed within an hour.

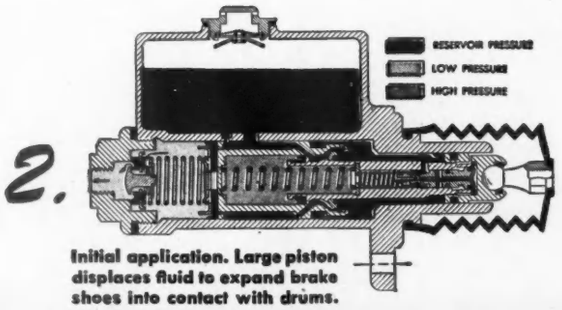
Send for Demonstrator Unit!

HYCON Truck Brakes are now built to replace 1¼" and 1½" Di. original equipment cylinders. Write for free descriptive booklet. *Order a demonstrator unit* from your local power brake distributor, or write direct to The New York Air Brake Company, 420 Lexington Avenue, New York 17, New York.

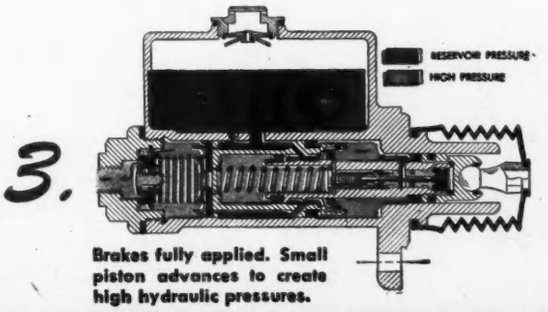
3 Steps in HYCON Operation:



Brakes in "released" position.



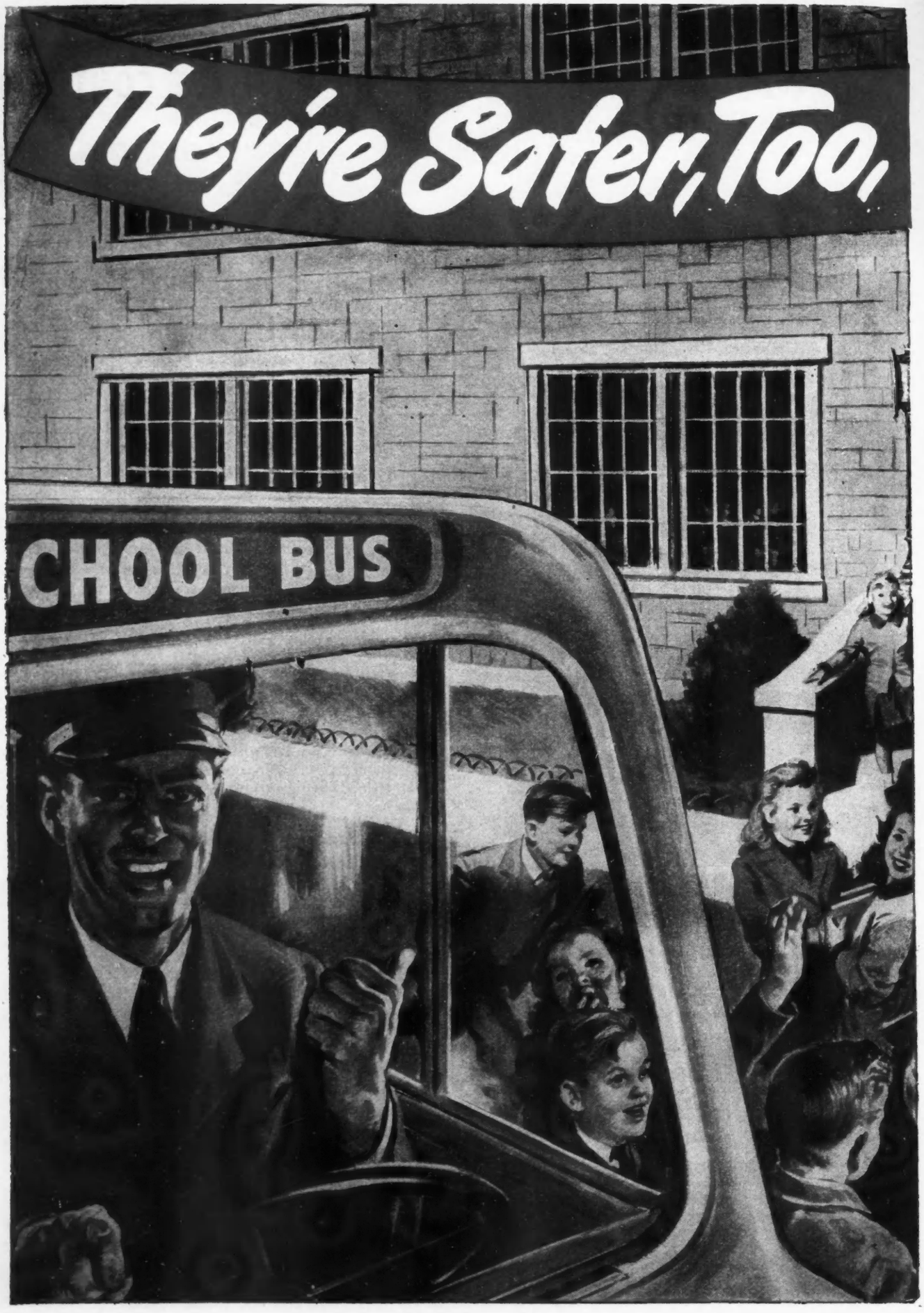
Initial application. Large piston displaces fluid to expand brake shoes into contact with drums.



Brakes fully applied. Small piston advances to create high hydraulic pressures.

THE NEW YORK AIR BRAKE COMPANY

420 Lexington Avenue, New York 17, New York


They're Safer, Too.
CHOOL BUS

Reline with Wagner CoMaX BRAKE LINING



the line is complete and it's available NOW!

You gain by ordering your *entire* requirements of brake lining from a single source—do it by standardizing on CoMaX. The CoMaX line provides *complete coverage* for all trucks, tractors, trailers, passenger cars, and buses.

Regardless of what your lining requirements may be—whether drilled sets, rolls, blocks, or slabs—you'll find just what you should have in the Wagner CoMaX line.

CoMaX has these important characteristics:

1. Uniform in frictional qualities throughout the entire service thickness. As the lining wears, the same type of brake lining surface is always exposed to the drums.
2. Does not compress or swell. No changes in lining thickness take place, other than that caused by normal wear. Brakes remain adjusted over long operating periods.
3. Easy on drums. Contains no abrasive material.
4. Wears slowly. Its ingredients are carefully selected for extra-life properties.
5. Doesn't deteriorate with age. Whether in use, or on the shelf, CoMaX resists the elements.
6. Is quiet—grips silently, with no "howling" or "squealing".
7. Permits smooth, controllable deceleration. No jerking stops. CoMaX responds to the degree of brake application.

Ask your Wagner jobber or write us for details on this great line. Catalog BU-128 will be supplied FREE on request. Also ask for Wagner Lockheed Hydraulic Brake Parts and Fluid Catalog HU-122 ... Wagner Electric Corporation, 6470 Plymouth Ave., St. Louis 14, Mo., U. S. A.

B46-2



Wagner



LOCKHEED HYDRAULIC BRAKE PARTS and FLUID ... NoRoL
... CoMaX BRAKE LINING ... AIR BRAKES ... TACHOGRAPHS ...
ELECTRIC MOTORS ... TRANSFORMERS ... INDUSTRIAL BRAKES

BUILT FOR SERVICE

SIOUX

ELECTRIC DRILLS

Good-looking—yes, but a bear for work. Designed for greater efficiency, lighter weight, increased power and improved handling. And boy, can they take punishment.

A SIZE FOR EVERY NEED

Heavy Duty 1"—¾"—⅝"—½" (2)—⅜"—(2) 5/16" —¼"—Special ¼" All Angle. Buy for service—buy SIOUX.

STREAMLINED

WITH A PURPOSE



ASK YOUR JOBBER'S SALESMAN

STANDARD THE WORLD OVER

ALBERTSON & CO., INC. SIOUX CITY, IOWA, U. S. A.



"I'LL TAKE THAT TOUGH WARD LA FRANCE ANY DAY—ESPECIALLY COLD DAYS!"



For consistent day after day performance your best bet is a Ward LaFrance. Winter or Summer — 30° below or 110° in the shade — the big, new Ward LaFrance heavy duty trucks are the answer to *all-weather* hauling.

Especially on cold days when truck efficiency is lowest, their exceptional performance will prove to you that they are the trucks for your heavy hauling operations.

The new Ward LaFrance trucks and over-the-road tractors are designed, engineered and manufactured to take Old Man Weather's worst — and still stay on the job.

For complete information about these trucks that are setting new standards of performance, see your local dealer. If no dealer has yet been appointed in your community, write our Sales Department today.

WARD LAFRANCE TRUCK DIVISION
Great American Industries, Inc.

ELMIRA, **NEW YORK**

WARD MOTOR TRUCKS LA FRANCE

LYON Says "MARMAN clamps reduce operating and maintenance costs"



Huge, sturdy Stream-Lyoner vans are equipped with only quality accessories because they must be kept in regular service day and night. With Marman clamps helping to prevent costly breakdowns, Lyon movers are free to concentrate on safe, expert jobs of local or coast-to-coast moving. *Marman Universals serve long and well because they're made of stainless steel for high strength and corrosion resistance. They're vibration-proof, and can be used over and over without efficiency loss. Easy to install or remove... mechanics get 'em on right the first time. Three sizes handle all hose diameters 5/8" to 3 5/8".



Marman Universals clamp both round and irregular shapes on one of Lyon's huge Stream-Lyoner vans.

***You, too,** will see fleet maintenance costs go down when you install Marman Universals on your trucks or busses.



Fleet Operators: There's valuable clamp information waiting for you in our new folder Series 820. Call your jobber or write today.

MARMAN PRODUCTS CO. Inc.
940 WEST REDONDO BOULEVARD
INGLEWOOD, CALIFORNIA

Marman also makes other types of clamps... many specially designed to specific manufacturing or installation problems.



Circo

FIRST IN THE FIELD— WITH A WIDE RANGE OF PARTS CLEANING UNITS

Now, there is a Circo Parts Cleaning Unit available to fit every pocketbook and to meet the requirements of every shop, garage, service station, car dealer and fleet owner.

Remember, Circo Products Company pioneered in this field, their engineering staff backed up with many years experience know how to lick parts cleaning problems both economically and efficiently. During the war, our government availed themselves of this engineering skill and manufacturing experience with the result that thousands of Circo cleaning units served their hitch in the service with distinction.

If you are out to make money...more money than you are now making on repair work, Circo Units will turn in a parts cleaning performance that will positively show bigger profits on every repair job all along the line. They save the mechanics time, cut cleaning time down to a fraction, save material, cut costs to an unbelievable low. Start right with a clean dry part and you'll end right with a profitable repair job.

Circo units are not gadgets, but engineered cleaning equipment, designed to do a specific job of parts cleaning, and do it better and more economically than any other method or equipment on the market.

Send In for Free Literature



ANOTHER FAMOUS FIRST IN 1904!

THE WINDSHIELD MADE ITS BOW!



MODELS SHOWN

HYDRO SPRAY
C-14
C-42
C-90
CHIEF
COMET

CIRCO PRODUCTS COMPANY

2835 CHESTER AVE. • CLEVELAND 14, OHIO



Installing New LYNITE* LO-EX Pistons

REG. T. M., A. C. O. A.
LYNITE
ALUMINUM

War-weary engines are at last coming into their own—new LYNITE LO-EX PISTONS to fit freshly bored and honed cylinders. "Like-new" pep for engines that have served so faithfully with so little attention.

Ohio Piston Company has been making regular shipments to distributors for some time now.

You should soon be able to walk into parts departments everywhere and get these finest of replacement pistons—LYNITE LO-EX PISTONS by OHIO.

*Lynite and LO-EX are registered trademarks of Aluminum Company of America, makers of castings for genuine Lynite Pistons.

THE OHIO PISTON CO.

CLEVELAND, OHIO, U. S. A.





HIGHWAY
AMERICA'S QUALITY
TRAILERS

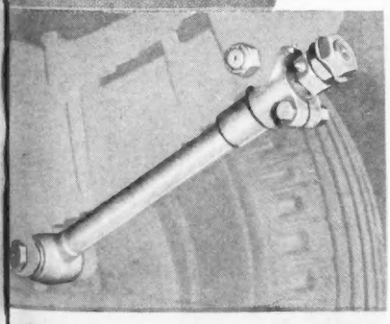


Easy to load, easy to handle, easy to maintain . . . HIGHWAY TRAILERS

Whether you see them at a crowded city loading dock or moving swiftly on a highway, you can be sure Highway Trailers are doing a good job, doing it well, doing it economically. That's because Highway Trailers are engineered by men who know every transport problem—men with over a quarter-century of successful trailer-building experience behind them. Easy handling, low maintenance, extra years of service are the results.

Trailer manufacturing at Highway is not a mere assembly operation. Highway's enlarged plant at Edgerton now uses the longest straight-line production line in the trailer industry. Highway's forge shops make use of the most modern techniques and methods. The new Highway "Freightmasters" and "Clippers" represent peak value.

Write today for full color booklets giving details on Highway Trailers' many points of superiority. Learn how their lower ton-mile costs can cut your hauling expense. It will pay you to let your next trailers be Highways'.



Radius rods are heat-treated steel forgings, full swiveling, easily adjustable for micrometric axle alignment; bronze-bushed upper end, rubber bushed lower end.

HIGHWAY TRAILER COMPANY

Factory and General Offices, Edgerton, Wisconsin

Commercial Truck Trailers • Earth Boring Machines
Winches and other Public Utility Equipment

On Every U.S. 12 *Highway*

Now you can get bigger value with this G-E lamp that

DOES NOT GROW DIM!



Your vehicles always have "new-car" headlighting when you replace headlamps with General Electric "All-Glass" Sealed Beam Lamps. Because road and laboratory tests prove that the average G-E Sealed Beam Lamp maintains 99% of its original light output right up to the end of lamp life. *They do not grow dim.*

Lens and reflector made of extra-hard glass like that used in top-quality ovenware, are *fused* together. Absolutely no moisture, dirt or air can enter. The reflector cannot tarnish. Road vibration cannot jar filaments loose. Be sure you have plenty of G-E Sealed Beam Lamps in stock! General Electric Lamp Dept., Nela Park, Cleveland 12, O.

"ALL-GLASS" SEALED BEAM

G-E LAMPS

GENERAL ELECTRIC

Look at the Records!



the best brake is AIR!

BENDIX-WESTINGHOUSE GENUINE AIR BRAKES

World's Standard of Safety!

Once a truck or bus operator installs Air Brakes his own records keep him sold. On the "credit side" of the ledger will be found faster and more dependable schedules, satisfied drivers and far safer operations.

Missing from his records will be long and costly lay-ups for brake service and repairs, resulting in lower operation cost and efficient performance standards.

Yes, records like performance prove *the best brake is AIR* and the experience of operators, dealers and manufacturers demonstrates conclusively that the best AIR BRAKE is Bendix-Westinghouse.

BENDIX-WESTINGHOUSE AUTOMOTIVE AIR BRAKE COMPANY
ELYRIA, OHIO

Bendix-Westinghouse

AUTOMOTIVE AIR BRAKES

TRUCK TROUBLE INSURANCE

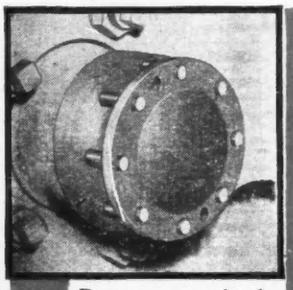
RE-CONDITIONING CHAMP-ITEMS INC. SHORT CUTS



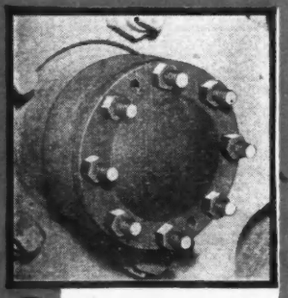
Lock all studs together as one unit; provide the extra bearing, stop rock at tip and your stud troubles are over.

REAR AXLE STUD LOCKING RINGS

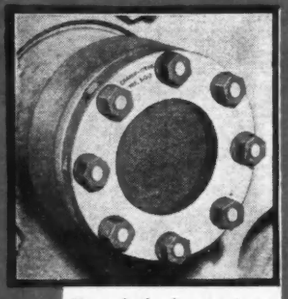
FOR ALL POPULAR TRUCKS



1 Remove standard nuts and studs. Install longer studs furnished with kit; replace axle, using old nuts.



2 Remove axle shaft "pull-out" studs.



3 Place lock ring against hexagon nuts and use lock washers and hexagon nuts furnished with kit. Draw up tight.

Champ-Items Rear Axle Stud Locking Rings fit about 95% of all trucks. Check these specifications against your equipment to determine proper Kit. These patented rings—made of steel—come in complete Kits for each truck or bus.

Bolt Circle Diameter	Diameter of Stud	Number of Studs per Wheel	Champ-Items Stock Number
3⅞"	Std. 7/16"	8	No. 500
3⅞"	Std. ½"	8	No. 500A
4¾"	Std. 7/16"	8	No. 501
5⅜"	Std. ½"	6	No. 502
5⅜"	Oversize 9/16"	6	No. 502A
5⅜"	Std. ⅝"	6	No. 502B
4½"	Std. 7/16"	8	No. 503D
5 1/32"	Std. 7/16"	8	No. 504D
5 7/16" or 5½"	Std. 7/16"	12	No. 515
5 7/16" or 5½"	Oversize ½"	12	No. 515A
3⅞"	Oversize 7/16" x ½"	8	No. 516
4¾"	Oversize 7/16" x ½"	8	No. 517
5⅜"	Oversize ½" x 9/16"	6	No. 518
5 5/16" or 5⅜"	Std. 7/16"	8	No. 519
5 5/16" or 5⅜"	Oversize ½"	8	No. 519A
4"	Std. ⅜"	6	No. 520

List **$7.00** per Set

Packed individual sets of: 2 lock rings — all necessary Special Studs—Lockwashers and Nuts.

Order From Your Jobber

CHAMP-ITEMS, Inc.
6191 MAPLE AVE., ST. LOUIS, MO.

Write Us For Complete No. 500 Specification Sheet

HONING PROBLEMS SOLVED

with the WEBSTER J. P. Patented HONE

Speed Production • Cut Costs!

New Webster Honing Machines increase production, improve quality, reduce operating costs and are uniformly accurate within .0001". Floor Model Features include a Foot Switch . . . a Dial Type Micrometer Adjustment . . . an Ammeter indicating the correct cutting pressure. No modern shop can be complete without one or more Webster Honing Machines.



WEBSTER HONES DO THE JOB

Accurately and Faster

FINISH 3 MICRO INCHES
ACCURATE TO .0001"



ADAPTABLE
TO YOUR PRESENT HONING MACHINERY, LATHES AND DRILL PRESSES

Hone Sizes Available from .720" to 6.000"
Head Expansion from .125" to .500"

An outstanding development, the Webster J. P. Hone has 360 degrees of cutting surface! 8 cutting edges per stone, 6 stones per set honing all the way around . . . all the time! Every revolution has 100% cutting efficiency! Engineered design allows a continuous flow of oil over the stones . . . keeping the cutting edges clean at all times. Easily adjusted while in operation. Meets the highest, most exacting standards of accuracy and super finish!

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SPEEDY! STURDY! MIGHTY!

This Webster is indispensable for Garages, Repair Shops and Tool Rooms.

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DURO-CHROME
...a Doggone Good Tool!



There is No Substitute for Good Tools — and Duro-Chromes *are "Doggone Good"!*

DURO hand tools are so beautifully balanced that they feel like an extension of one's own arm. When a mechanic picks up such a tool, he knows that tool is RIGHT, and the way the tool performs confirms his opinion. That's how DURO tools bring *OUT* the skill and experience that are *IN* a man; the mechanic enjoys using them, and the boss appreciates the better work that's done. That is why—across the nation and around the world, in every language—both men and management agree that "DURO Tools are Doggone Good Tools" . . . **Duro Metal Products Co., 2649 No. Kildare Ave., Chicago 39, Illinois.**

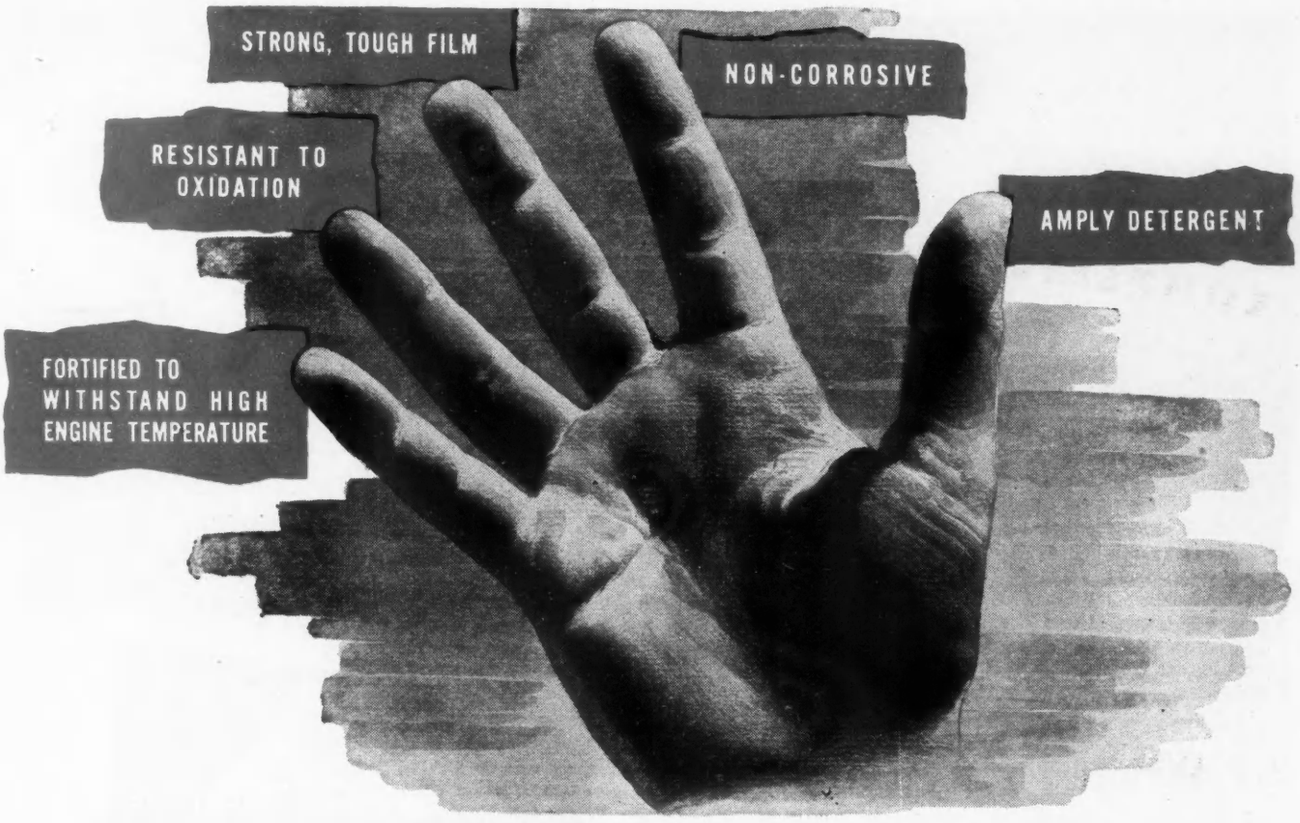
DURO TOOLS (HAND TOOL DIVISION)

The Mechanic's Best Friend

OVER A BILLION BUILT SINCE 1916

ALSO MAKERS OF DURO MACHINE TOOLS

1436



THE FINGERS OF YOUR HAND TELL THE STORY OF *Heavy Duty*

Look at your hand. Notice how your fingers are of various sizes . . . yet they all blend into smooth, strong action. That pretty well tells the story of Wolf's Head Heavy Duty Oil. The five characteristics which every heavy duty oil should have are expertly blended in Wolf's Head Heavy Duty in just the right proportions. The result is a Heavy Duty Oil that cannot be surpassed.

All heavy duty oils, to some extent, have one or more of these characteristics—but Wolf's Head Heavy Duty Oil has—*all five.*

Leading operators of truck and bus fleets specify Wolf's Head Heavy Duty Oil because it has the quality to stand up under overload conditions—and it has the quality to cut down engine wear and reduce operating costs. Proof of Wolf's Head Heavy Duty performance is contained in our booklet "Heavy Duty Maintenance." Write for your free copy to Wolf's Head Oil Refining Co., Inc., Oil City, Pa., or New York 10, N. Y.

LABORATORY CONTROL SERVICE

Gives fleet operators specific recommendations for their units, based on analysis of crankcase oil. Helps to establish correct drain periods, conserve engine life, reduce lay-ups—frequently reveals unsuspected engine troubles. Free and without obligation.

WOLF'S HEAD

MOTOR OIL AND LUBES

100% PENNSYLVANIA P.G.C.O.A. Permit No. 6

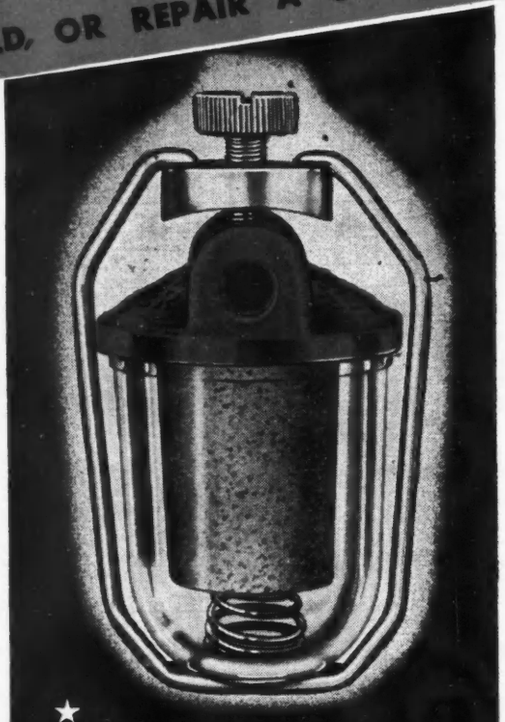
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COMPLETE SATISFACTION
INSTALL A

CARTER CERAMIC ★
FUEL FILTER



EVERY TIME YOU INSTALL, REBUILD, OR REPAIR A CARBURETER

Then you can be sure that the carbureter will stay clean. You will appreciate this low-cost protection against unnecessary trouble.



★ Filtering unit of specially prepared porcelain keeps harmful matter out of carbureter.

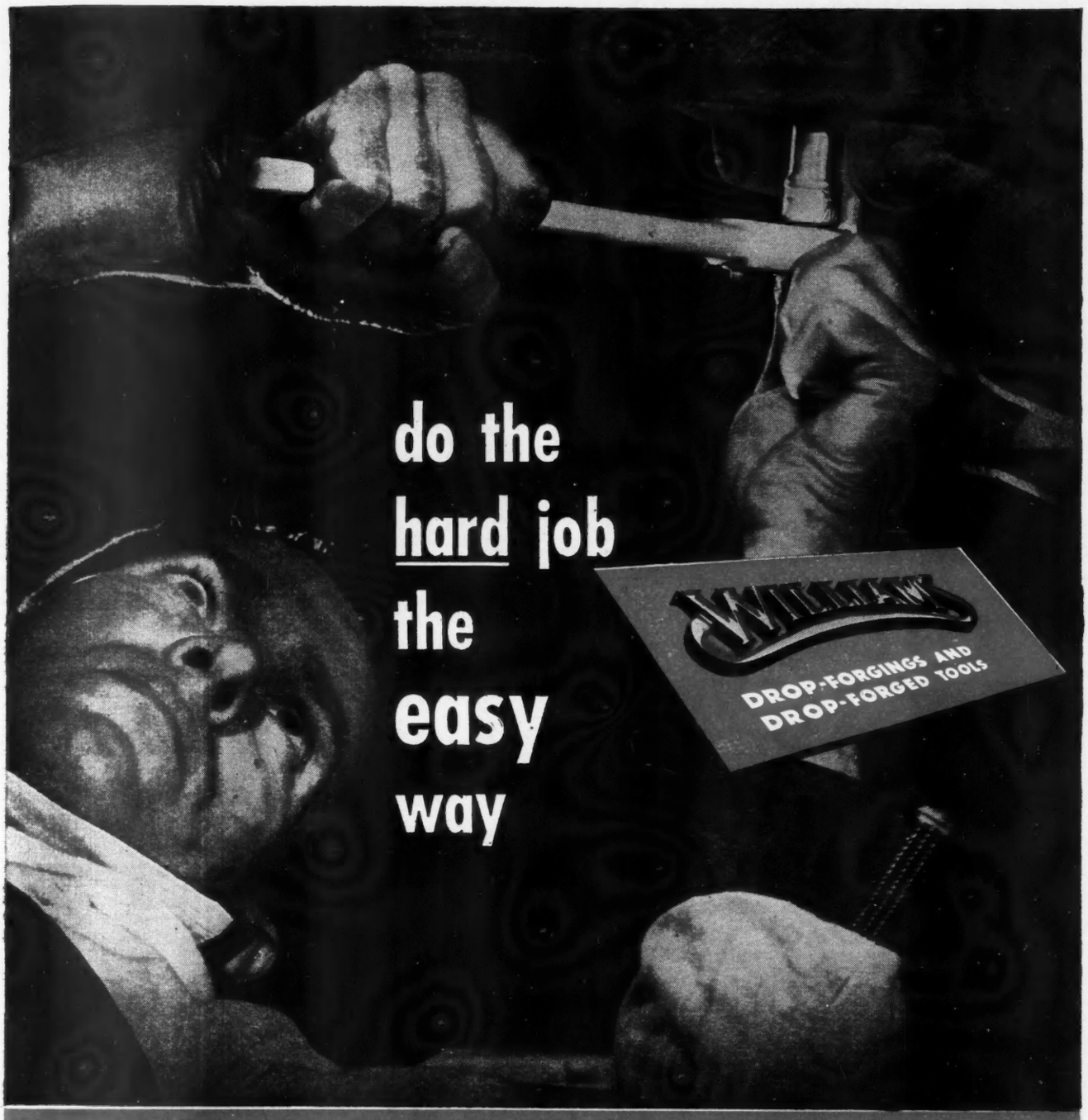
CARTER CARBURETOR CORPORATION

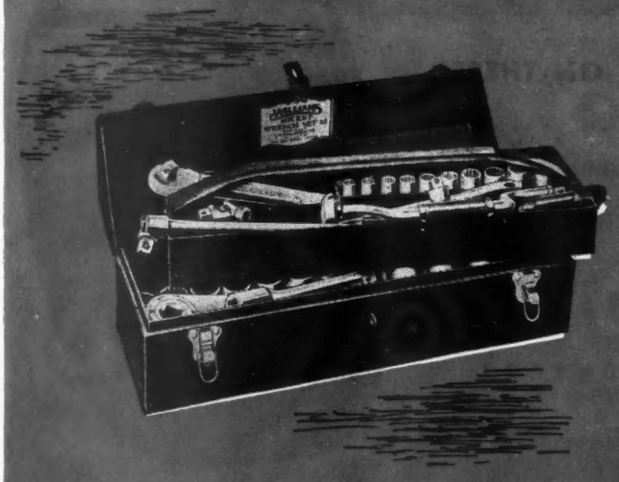
St. Louis 7, Mo.

Division of American Car and Foundry Company

CARBURETER

TRADE MARK REG. U. S. PAT. OFF.
MARCA REGISTRADA





Williams SUPERSOCKETS provide the mechanic with a complete wrench system. Inaccessible places can be reached with a minimum amount of time and effort.

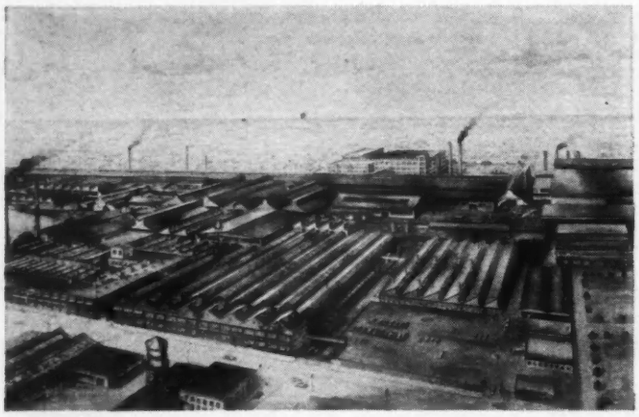
Quick-change wrench assemblies give SUPERSOCKETS remarkable versatility. Thin walls that fit in tight places, together with a variety of extensions and handles, allow SUPERSOCKETS to get where they are needed most.

SUPERSOCKETS—only one of the many types of Williams tools on which the good mechanic *relies*.

J. H. WILLIAMS & CO. • BUFFALO 7, N. Y.

Can you pass this quiz?

If you know bearings, you may know all the answers. Check yours. The correct answer will be found in the lower right hand box.



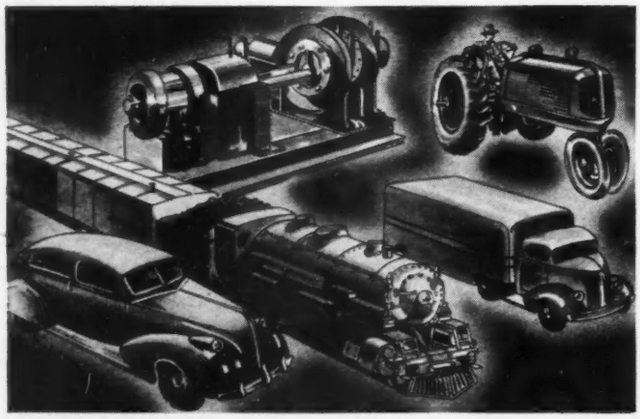
1. The Timken Roller Bearing Company is the largest manufacturer of tapered roller bearings in the world. How many plants are devoted to the manufacture of this product?

One ☐ Eight ☐ Fourteen ☐



2. In order to maintain the quality and precision of Timken Bearings, what percentage of employees would you say devote their full time to inspection?

10% ☐ 30% ☐ 50% ☐



3. Since 1898, when The Timken Roller Bearing Company started in business, how many Timken Bearings would you estimate have been used in America's vehicles and industrial equipment?

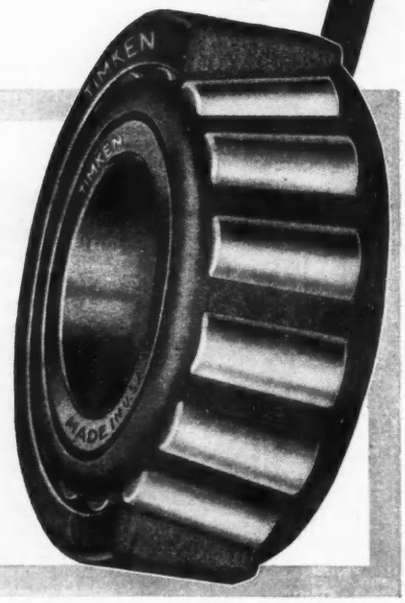
5,000,000 ☐ 453,000,000 ☐ 766,000,000 ☐

ANSWERS

1. There are eight Timken Bearings plants. One each in Canton, Gambrinus, Newton Falls, Wooster, Columbus and three in Zanesville.

2. The correct answer is over 30%. Precision testing and inspection is a routine procedure in the production of Timken Bearings beginning with the melting of the steel and continuing through every operation to final shipment.

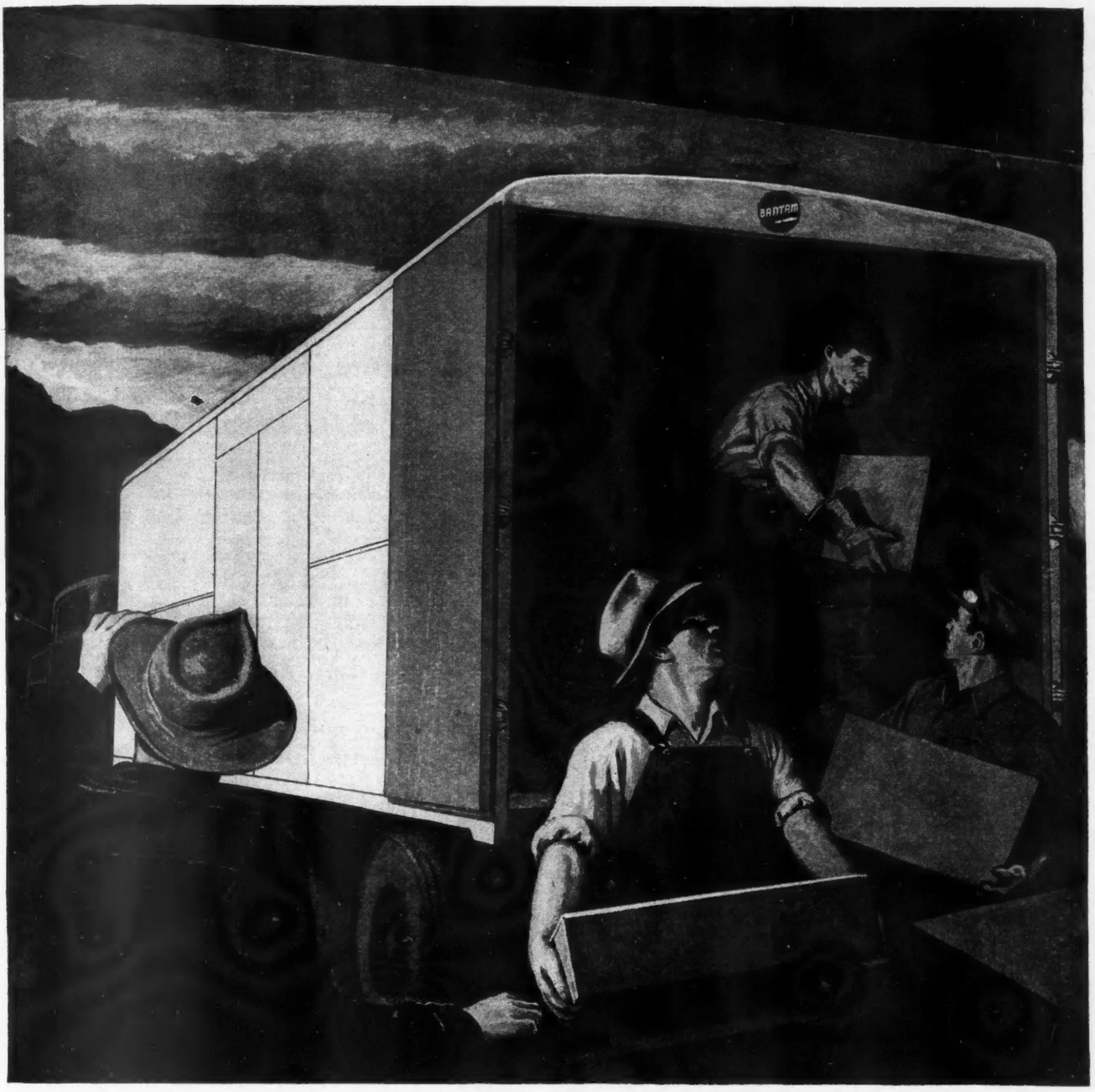
3. More than 766,000,000. Automobile, truck and industrial equipment manufacturers give Timken Bearings overwhelming preference over all other independent roller bearing manufacturers combined.



AND OF COURSE YOU WOULDN'T MISS ON THESE!

- ★ It's sound service practice to play safe.
- ★ To follow the judgment of top automotive engineers.
- ★ To look for the trade-mark "TIMKEN" plainly stamped upon every Timken Bearing.
- ★ To always replace a Timken Bearing with a Timken.

THE TIMKEN ROLLER BEARING COMPANY
CANTON 6, OHIO



AMERICAN BANTAM "Trade Approved" Trailers are now on the road! Built into them are all the features that trailer men told us they wanted.

We will be in mass production as soon as sufficient materials are available. So keep your eye on American Bantam for "Trade Approved" Trailers . . . coming soon!

SUPERCARGO

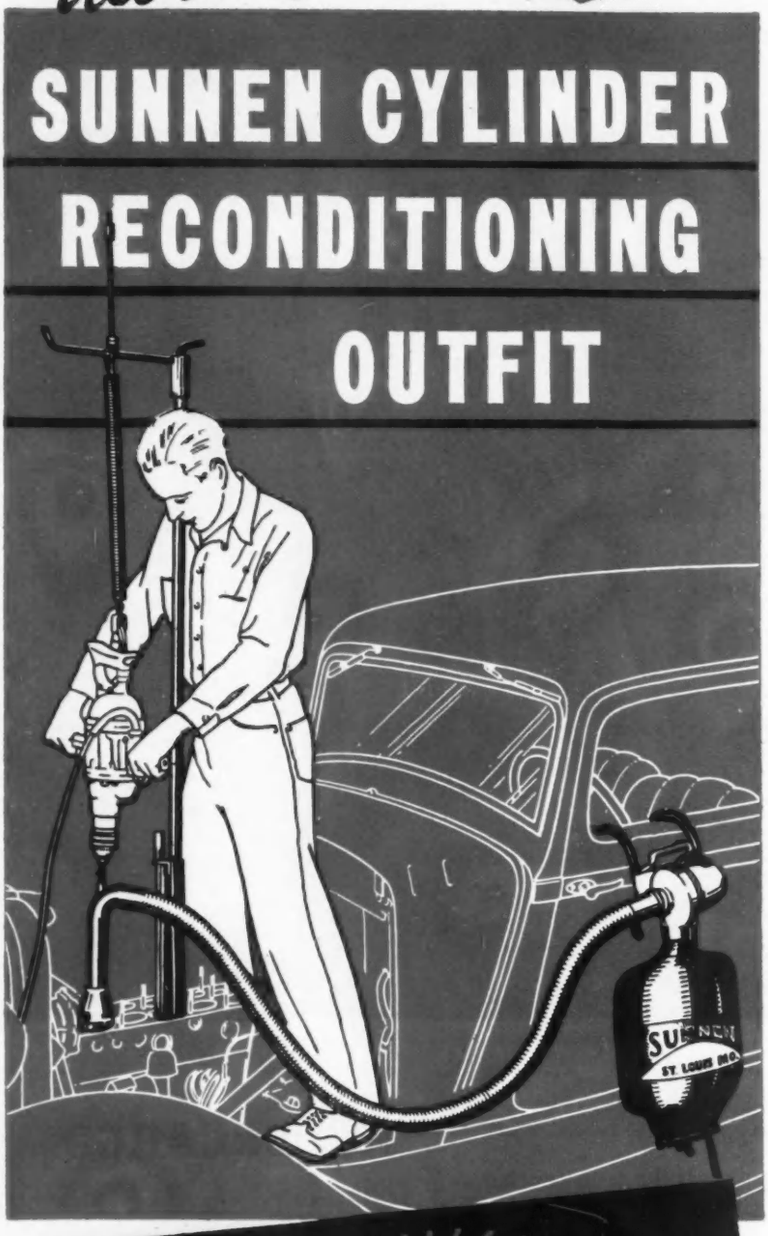
BANTAM

TRAILERS

AMERICAN BANTAM CAR COMPANY • BUTLER, PENNA.

For Fast, Accurate Cylinder Refinishing.. with Less Work, Less Cleaning Up..

Use the Complete



SUNNEN

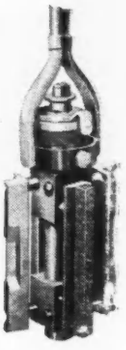
SUNNEN PRODUCTS CO.

7917 Manchester Avenue • St. Louis 17, Missouri

Canadian Factory: Chatham, Ontario

The complete Sunnen Cylinder Reconditioning Outfit consists of three parts

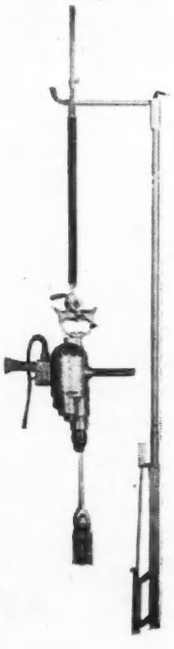
1. The famous Sunnen Cylinder Grinder that has set the standard of accuracy in the automobile rebuilding industry. Accuracy is guaranteed to be within .0005″ with a mirror-smooth finish. This produces a better oil seal and better compression — eliminates ring flutter and "blow-by."



2. The Sunnen Grit Remover cleans as it grinds — sucks away all the cuttings just like a vacuum sweeper removes dirt. When the last cylinder is honed, your job is completed — eliminates messy clean-up— saves an hour on each job.



3. The Universal Grinding Stand supports the weight of the drill and grinder— and controls the depth of the stroke. It can be set up, ready for use, in ½ minute.



You can be sure that your work is accurate and that it is done the quickest, easiest way when you use the complete Sunnen Cylinder Reconditioning Outfit.

An EXTRA TON in Every Load



. . . that's the 10-Year Record of this Republic High Strength Steel truck body

This 12-ton dump truck, owned and operated by Holland Coal Company, Chicago, ably demonstrates the profitable advantages which Republic High Strength Steels offer the fleet operator.

Truck tare weight was reduced one ton . . . payload was increased by an equal amount—without adding strain to the axle or other moving parts. Averaging 8 to 10 trips per day, the truck now carries approximately *two full loads per day more* than was possible with ordinary steel bodies.

Due to the highly corrosive nature of the treated coal, previous truck bodies lasted only four or five years. Yet, AFTER MORE THAN 10 YEARS, this Republic High Strength Steel body still is in active service.

Republic—pioneer in high strength steel development—now offers you three different high strength steels: Republic ALDECOR, Republic COR-TEN and Republic DOUBLE STRENGTH in bars, plates, sheets and strip. While all are similar in physical properties, certain differences in forming and welding characteristics may make one, more than the others, best suited to meet your requirements. For further details, write to:

REPUBLIC STEEL CORPORATION
GENERAL OFFICES • CLEVELAND 1, OHIO
Export Department: Chrysler Building, New York 17, New York

Republic
HIGH STRENGTH STEELS
ALDECOR • COR-TEN • DOUBLE STRENGTH

Other Republic Products include Carbon, Alloy and Stainless Steels—Sheets—Plates—Pipe—Bars—Wire—Bolts, Nuts and Rivets



Other Products: • TANKS • HEATING EQUIPMENT • MOTOR BOATS

You'll Be Glad You Waited



FOR DU PONT

DULUX

REG. U. S. PAT. OFF.

the finish that lasts longer, cuts finishing time and costs

GOOD NEWS! Increased production of Du Pont DULUX promises a growing supply available to fleet operators. This outstanding finish has long been the standard in the refinish field. Why? Because tough DULUX stands up under severe weathering and rough handling. Because equipment finished in DULUX looks better longer, requires less "time out" in the paint shop. Put DULUX first on your finishes list and check with your supplier for availability.

E. I. du Pont de Nemours & Co. (Inc.), Finishes Division, Wilmington 98, Delaware.

BACK AGAIN!



DU PONT
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DULUX

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BETTER THINGS FOR BETTER LIVING . . . *THROUGH CHEMISTRY*

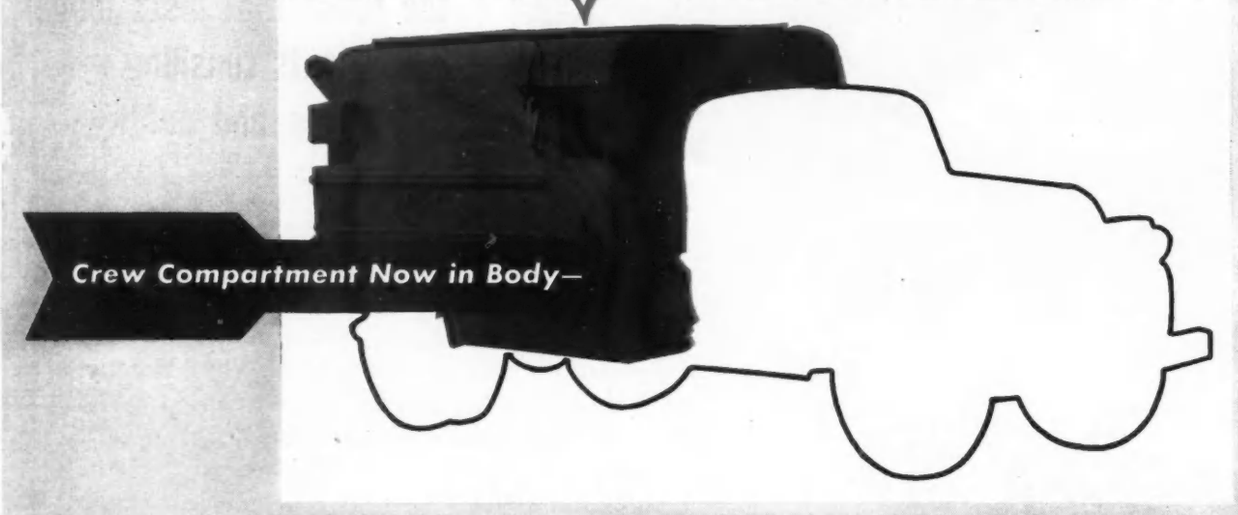
2 IMPORTANT BENEFITS in the RE-DESIGNED *American B 4*

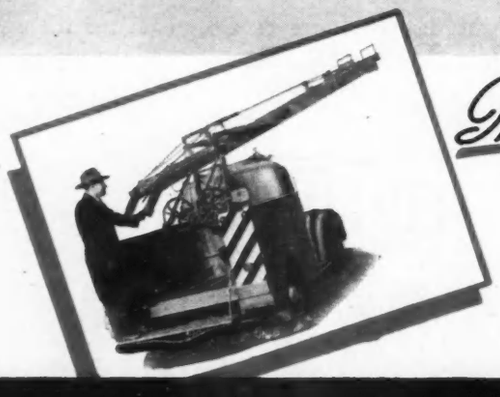
1 You gain two important benefits with the re-designed American B4, the famous all-around utility truck with the many exclusive American features.

The crew has much more room, a full 39" of width, complete visibility, good ventilation and all-around, safe comfort. They arrive on the job ready to go to work.

2 Here's the important dollar story. The crew-in-the-body removes the cab from the special to the standard class. This means ready resale on the open market. An important factor when you consider American bodies outlast a chassis at least 2 to 1 and many times 3 to 1. Now your B4 is more valuable than ever before.

Get the complete profit story on the American B-4 in Bulletin B-4, mailed promptly on request, or ask us about it on your next visit to the big modern American factory in Cleveland, Ohio.





Improved AMERICAN REVOLVING AERIAL LADDER

New method of counter-balancing makes this ladder so easy to manipulate, a child can do it. Regardless of angle, you can place in position with one hand. 40 spotting positions instead of 20. Turn complete circle in as narrow a body as 46". New type lock assures complete safety at all times.

Available in 3 sizes for any make of chassis . . . when fully extended, platform height to ground is 23' 6" . . . 26' 6" . . . 30' 6". *Saves time and money. Write for details.*

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9503 Woodland Ave. **CLEVELAND. OHIO**

ACB and

TOP FAVORITES OF THE AUTOMOTIVE INDUSTRY!



TWO MORE GENUINE "RING-TRUE" PRODUCTS!

For many years you've known Clawson & Bals for dependable, complete service on all your motor bearing and connecting rod requirements. And now, to its line of genuine "Ring-True" products, Clawson & Bals adds two other products known for their top quality and performance wherever cars are driven and serviced—*Bohnalite* Pistons and Pins! For complete information, write your C&B jobber, or Clawson & Bals, Inc., 2508 S. Michigan Avenue, Chicago 16.

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CLAWSON & BALS, INC.

REALLY COMPLETE MOTOR BEARING AND CONNECTING ROD SERVICE

FACTORY STOCKS IN PRINCIPAL CITIES



PILING UP

performance records

Fleet owners everywhere are enthusiastic about AC's latest engineering achievement—*wider Heat Range per plug.* They find that the new AC's maintain engine power over a wider range of operating conditions—are more resistant to fouling and oxide coating—have longer electrode life—save time and expense in the service department.

Have you tried the new AC's in your trucks or buses? They give you better performance under all operating conditions, with a steady flow of full engine power and consequent savings in fuel costs. Use them for reliable engine power.

LET'S FINISH THE JOB—BUY VICTORY BONDS

SEND FOR AC SHOP MANUALS

Field Service Dept., AC Spark Plug Division, General Motors Corp.
910 Mott Foundation Building, Flint 3, Michigan

Gentlemen: Please send me at once, no charge, the AC Shop Manuals checked:

- ☐ HOW TO SERVICE SPARK PLUGS
- ☐ How to Service Spark Plug Cleaner
- ☐ How to Service Oil Filters
- ☐ How to Service Fuel Pumps
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AC SPARK PLUGS

CONTINENTAL POWER
WHEREVER THERE'S WORK TO BE DONE



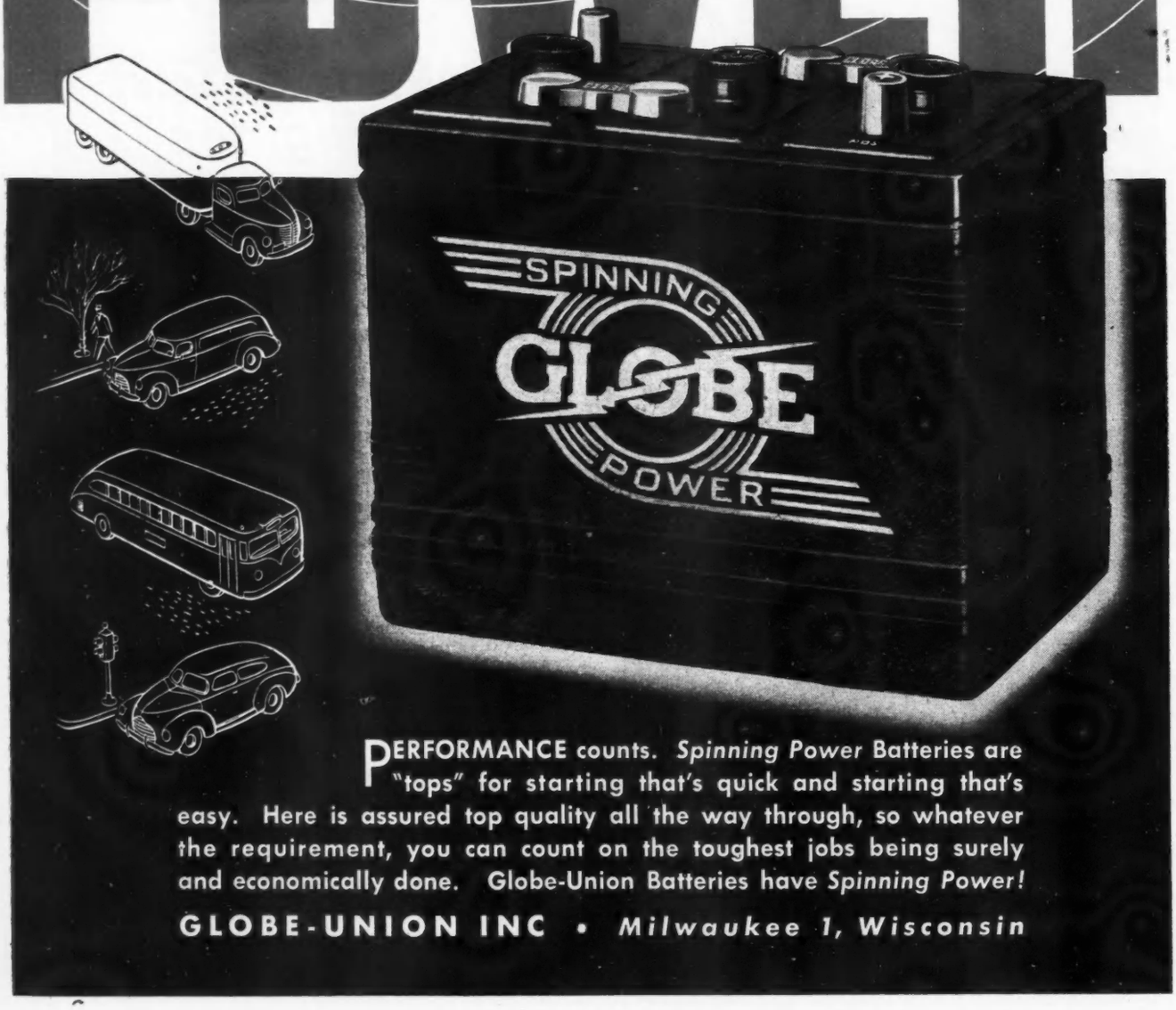
POWER BY
Red Seal Engines
CONTINENTAL

Continental Red Seal Engines are busier than ever today, powering the return of America and other lands to peacetime production, distribution and consumption. Trucks, buses, tractors, road-building machinery, pumps, cranes and mixers are delivering the efficient performance synonymous with Red Seal Power. Today's Red Seal Engines climax 44 years of engine building by Continental, embody know-how acquired both in wartime and in peace. Continental Red Seal Engines, gasoline or diesel, from 5/8 to 251 horsepower, are providing dependable, economical power wherever there's work to be done.

Continental Motors Corporation
MUSKEGON, MICHIGAN

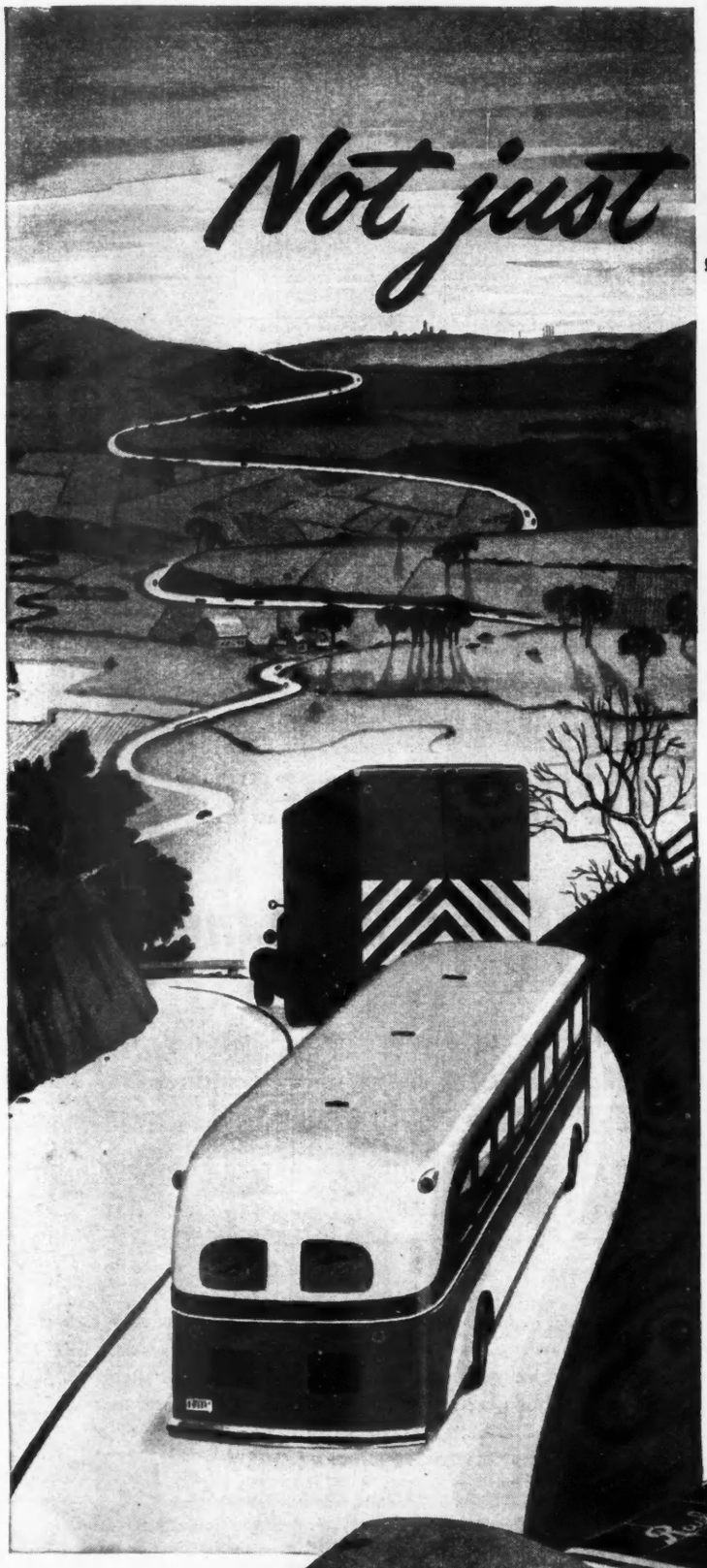
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GLOBE-UNION



PERFORMANCE counts. *Spinning Power* Batteries are "tops" for starting that's quick and starting that's easy. Here is assured top quality all the way through, so whatever the requirement, you can count on the toughest jobs being surely and economically done. Globe-Union Batteries have *Spinning Power!*

GLOBE-UNION INC • *Milwaukee 1, Wisconsin*



Not just brakes, but

DRIVING CONTROL

● Raybestos linings and brake blocks are more than just "stoppers." They give you full driving control . . . easy deceleration for sharp turns, steep hills, heavy traffic.

And when you consider that 6 out of every 7 brake applications on an average are for *slow-downs,* not stops, you can see why you're safest with Raybestos.

For *full-range* brake control at all times, reline with Raybestos . . . PG Truck Sets, drilled and countersunk for light and medium trucks—Heavy Duty Blocks for buses and bigger trucks.

THE RAYBESTOS DIVISION of Raybestos-Manhattan, Inc.
Bridgeport, Connecticut

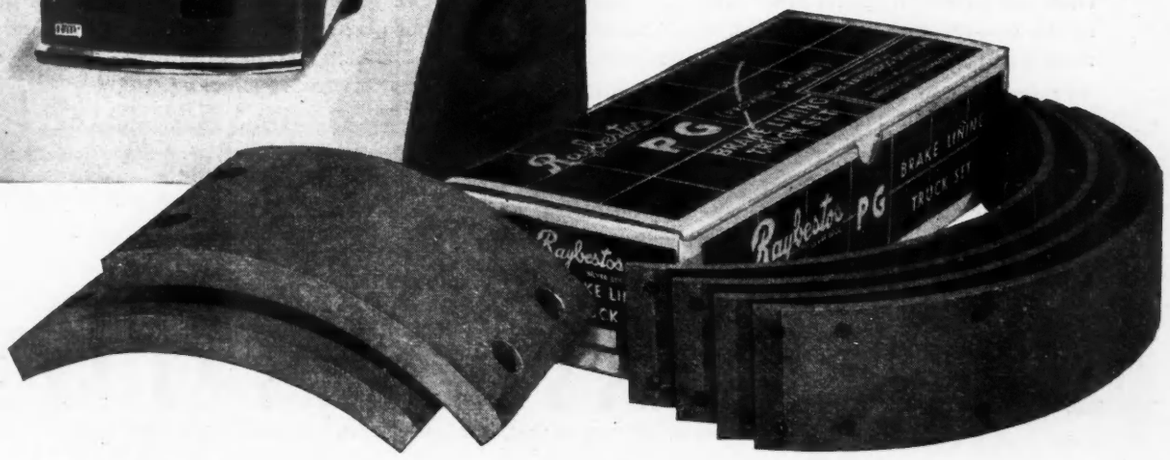
RELINE WITH

Raybestos

AMERICA'S BIGGEST SELLING

BRAKE LINING

BRAKE LINING • BRAKE BLOCKS • CLUTCH FACINGS
FAN BELTS • HOSE
FOR CARS, TRUCK, BUSES, AND TRACTORS





DAYTON CHALLENGES YOUR TOUGHEST HAUL···



···YOUR OWN RECORDS will be the judge!

Here's any girl, in charge of a fleet owner's truck tire records. She knows nothing about tread design, carcass construction, or bead composition. However, she does know which manufacturer's tires are producing the greatest on-the-job mileage in relation to their cost. And this, in the final analysis, is all *you* want to know.

Tire cost-per-mile, *from your own records,* is the only real low-down on truck tire performance. Claims for truck tire superiority mean little, unless they show up in the cost-per-mile column as the most consistently trouble-free performers . . . at the lowest cost-per-mile.

In fleets where complete records on truck tire performance are kept, Thorobreds by Dayton, show the most consistent record of staying on the job, for the toughest hauls . . . at the lowest cost-per-mile.

Put a pair of the new Thorobreds by Dayton on the toughest haul on your schedule and we will rest our case . . . more miles for less dollars . . . *on your own cost records.* If you aren't keeping mileage records of your tire performance and need help to set them up, call your nearest Dealer in Tires by Dayton and he will be glad to help you, or write to Dayton Rubber Mfg. Company, Dayton 1, Ohio.

* The Fighting Heart of each Dayton Thorobred is now reinforced with NEW 2200 Denier Rayon Cords. Super-strong, heat-resisting *Raytex cords welded by a special Dayton process "float in rubber" giving additional mileage . . . at the lowest cost-per-mile.

* Dayton Processed Rayon Cord

Dayton Rubber

THE MARK OF TECHNICAL EXCELLENCE IN NATURAL AND SYNTHETIC RUBBER

in this box is longer life for batteries



Replacing a worn or inadequate battery cable with a new WIRY JOE Battery Cable is one sure way to give any battery a new lease on life. All WIRY JOE Battery Cables are full No. 1 gauge—full battery voltage is delivered to the starter and spark plugs, and drain on the battery itself is minimized. *This all adds up to longer life for the battery!*

Check the battery cable on every unit of your fleet! And make sure every replacement is a WIRY JOE Battery Cable. That's the way to prolong the life of your batteries and assure easier starting and better engine performance.

ONLY WIRY JOE CABLES INCORPORATE ALL THESE FEATURES!

1. Extremely heavy brass terminal lead coated. **2.** Electronically soldered connection. **3.** Hi-Gloss lacquer finish—oil, grease, heat proof. **4.** Full No. 1 gauge copper conductors.

✓ **CHECK THE WIRE ON EVERY JOB!**

Wiry Joe
AUTOMOTIVE CABLE
manufactured by
THE CRESCENT COMPANY, Inc.
Pawtucket, Rhode Island



Engineered FOR EASIER SHIFTING

Easy shifts are an inbuilt characteristic of Fuller Transmissions —the result of long years of painstaking research and testing . . . long years of specialized experience in transmission engineering. Consideration of the many factors which effect the vital balance essential to ease of shifting has resulted in the development of two basic features:

1. *Short shifts . . . completed quickly . . . with less shifting effort.*
2. *Easy engagement provided by sliding jaw clutches with staggered teeth and by progressively spaced gear ratios.*

These features—and more—are carefully co-ordinated in Fuller Transmissions to provide the easy shifting that greatly reduces driver fatigue . . . greatly increases driver efficiency!

Fuller TRANSMISSIONS

FULLER MANUFACTURING COMPANY, TRANSMISSION DIVISION
KALAMAZOO, 13F, MICHIGAN
Unit Drop Forge Division, Milwaukee 1, Wisconsin

ENGINEERED FILTRATION





Present day truck motors draw increased power from closer tolerances engineered into all moving parts. Faultless lubrication is more vital than ever . . . oil simply *must* be kept *clean!* WIX new day, larger capacity OIL FILTERS are up to this heavy duty job, for they get maximum results out of the famous WIX "Sock-Type" and "Metal Can Type" Filterefils. For fleet operators especially, the WIX "Sock-Type" oil filter refill construction throws its full weight into the job of keeping lubricants and truck motors sludge-free . . . even the Knit cover filters too. There's a WIX replacement cartridge to fit *EVERY* filter-equipped motor. Regardless of the filters on your vehicles, put WIX to work on YOUR payload units NOW!

Lou Boyle says—

"Motor oil is like a guest towel . . . if it's dirty, it's almost as bad as none at all. Sludge and grit in dirty oil hit motors *inside* where it hurts most. Expensive repairs are easily prevented by installing WIX Filters and Filterefils to keep oil safe and motors clean."



wix TRADE MARK REG.

OIL FILTERS·FILTEREFILS

WIX ACCESSORIES CORPORATION • GASTONIA • N·C·

WAREHOUSES: ATLANTA • CHICAGO • DALLAS • KANSAS CITY • LOS ANGELES • MINNEAPOLIS • NEW YORK
SAN FRANCISCO — CANADIAN FACTORY: WIX ACCESSORIES CORPORATION, LTD., 161 Bay Street, Toronto, Ontario

THE BUSIER YOUR PAINT SHOP

THE MORE YOU NEED

"FACTORY PACKAGED COLORS!"

HERE'S WHY:

1 Exact color match to car makers' specs!

2 Eliminates mixing time!

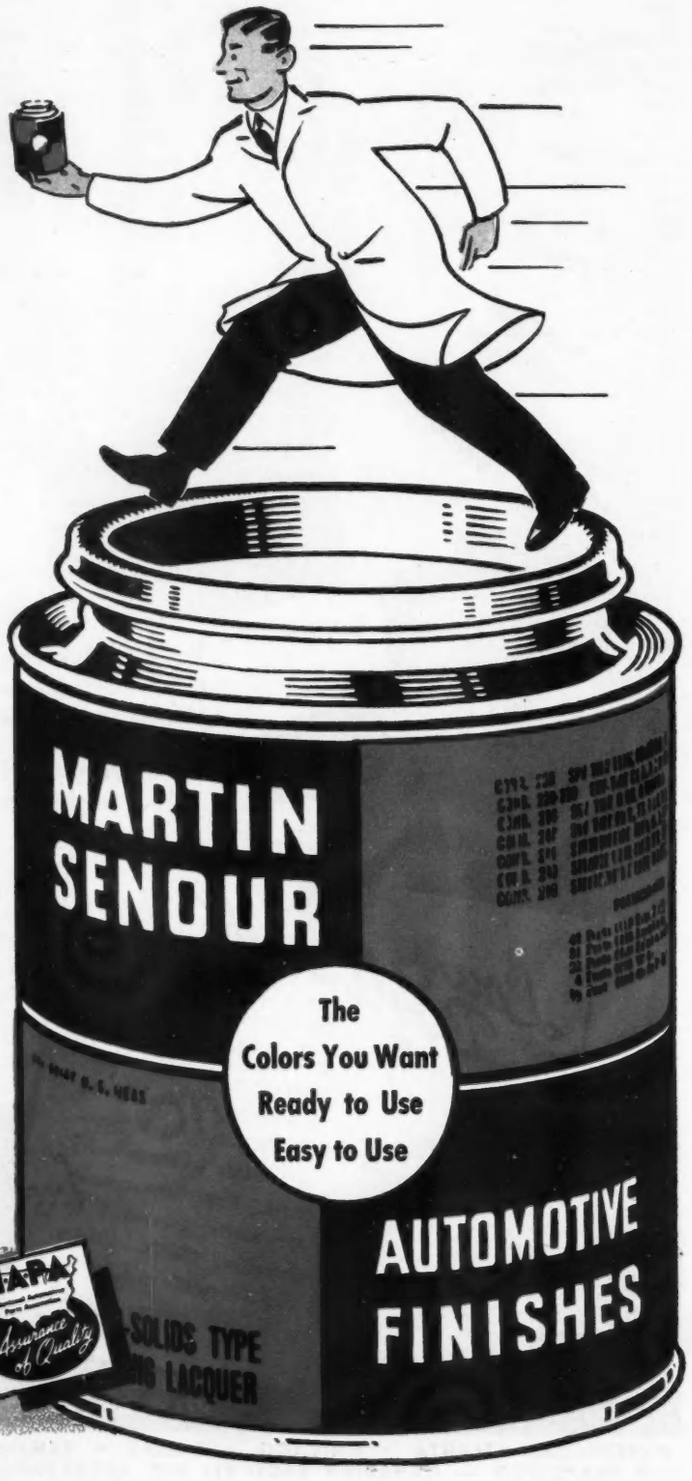
3 Patented pour-top can prevents waste!

4 No come backs— no headaches!

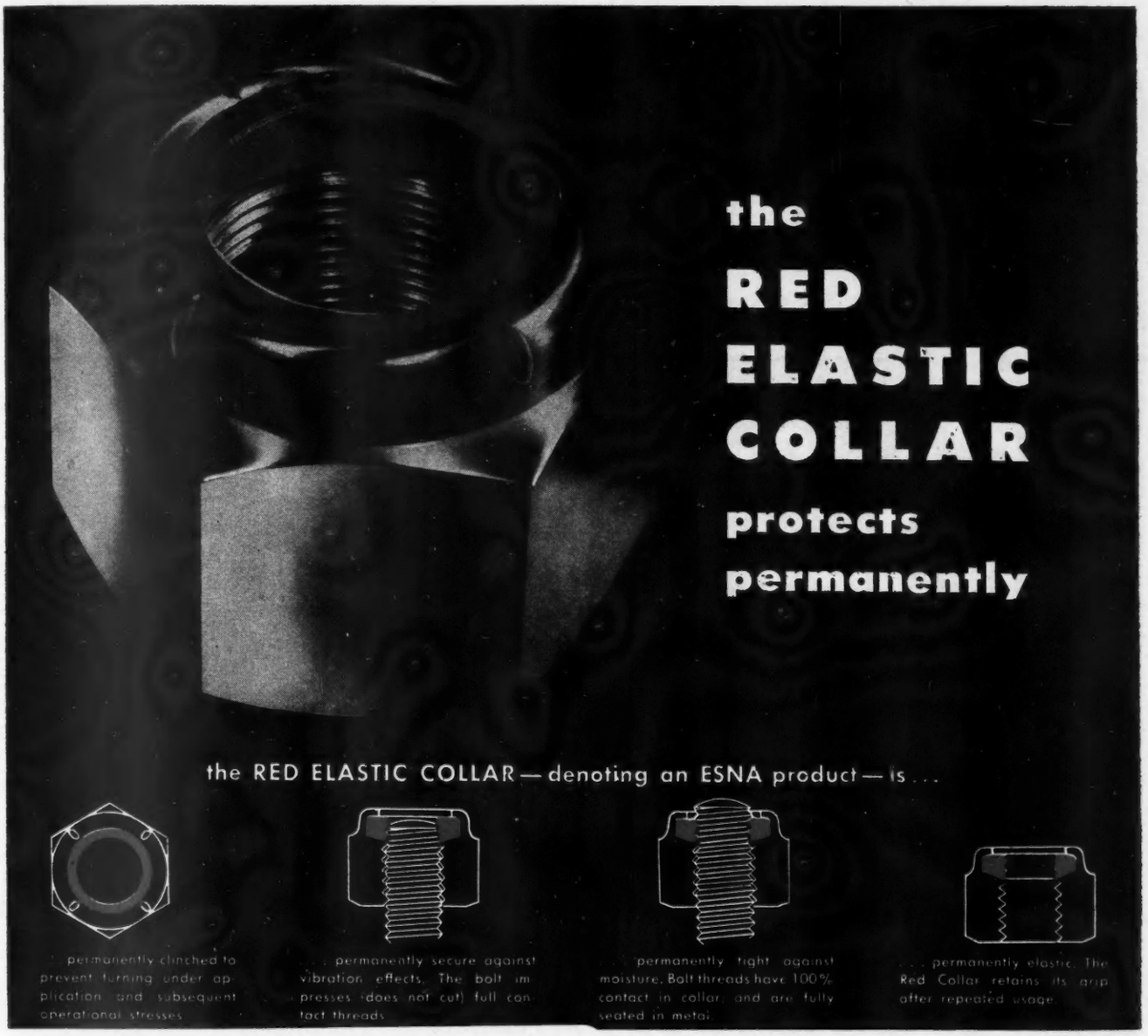
5 Saves shop time on every job!

6 Easier to handle — less skilled help needed!

7 Top beauty — top quality — top durability!



The MARTIN-SENOUR CO.
2520 Quarry Street, Chicago 8, Illinois



What happens when this Red Elastic Collar becomes part of a nut? The nut becomes an ESNA Elastic Stop Nut! And it provides permanent protection for any detachable or adjustable assembly.

How?

First, **an Elastic Stop Nut *locks in position anywhere on a bolt or stud.*** **Every bolt can be precisely prestressed to carry its full load. Positioning devices can be adjusted with precision. Vibration cannot disturb these settings — because the Red Elastic Collar eliminates all play between bolt and nut threads with its full contact, permanent grip.**

Second, **it *prevents thread corrosion.*** **Moisture is sealed out. Adjustment or removal is easy — any time.**

Third, **it *prevents thread damage.*** **Full thread contact in the Red Elastic Collar keeps the metal threads firmly seated. Axial play caused by vibration or stress reversal is dampened.**

Fourth, **it *prevents seepage of liquids past bolt threads.*** **Permits nut to be used as a sealing device.**

Fifth, **it *prevents maintenance waste.*** **The Red Elastic Collar, which does not injure the bolt or its plating, permits repeated usage.**

Here's a challenge: **Send us complete details of your toughest bolted trouble spot. We'll supply test nuts — FREE, in experimental quantities. Or, if you want further information write for literature. Elastic Stop Nut Corporation of America, Union, New Jersey. Representatives and Agents in principal cities.**

ESNA

ELASTIC STOP NUTS

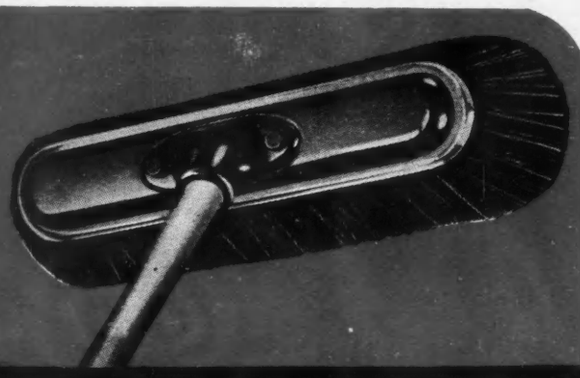
INTERNAL WRENCHING · ANCHOR · INSTRUMENT MOUNTING · SPLINE · CLINCH · GANG CHANNEL · CAP

PRODUCTS OF: **ELASTIC STOP NUT CORPORATION OF AMERICA**

SPEED WASH *has a back and reservoir of steel. The handle is lightweight electric welded steel tube 5 feet long, with brush socket at one end and standard hose-connection at the other. Brush head, 11 inches wide, is detachable and replaceable at low cost. Tufts of highest quality horsehair are drawn into the block by hand with rustproof wire.*

$9.45

POST PAID IF CASH ACCOMPANIES ORDER





Cut 3 Jobs Down To 1 With Speed Wash Fountain Brush

The old way of washing trucks requires three separate operations. Soaking! Scrubbing! Rinsing! Now, all three of these jobs can be done in one, with a Speed Wash fountain brush. The Speed Wash, you see, has a steady stream of clean, fresh water flowing through the handle and the brush itself. Thus each stroke loosens the dirt and carries it away. Actual experience of thousands of truck fleet operators proves that the Speed Wash cuts work and time just about in half and does a better job of cleaning besides. It's guaranteed to do the same for you. Order it today on the basis of complete satisfaction or your money refunded in full. Send check or your money order to Milwaukee Dustless Brush Co.



MD "Dustless"—"Speed Sweep"—"Speed Wash" Brushes

MILWAUKEE DUSTLESS BRUSH COMPANY

526 North 22nd Street • Milwaukee 3, Wisconsin


. . . Built to do more than expected!
★
All HEIN-WERNER HYDRAULIC JACKS are factory-tested at 1½ times rated capacity!
★
We don't recommend that a jack be overloaded—but, if and when an emergency makes it necessary—there is satisfaction in knowing that a H-W Jack has been factory-tested at 1½ times its rated capacity.
These super-powerful, easy-operating, absolutely dependable hydraulic jacks are made in models of 3, 5, 8, 12, 20, 30 and 50 tons capacity . . . For details, ask your jobber, or write us.
HEIN-WERNER MOTOR PARTS CORP.
WAUKESHA, WISCONSIN

IF YOUR FLEET HAS

"war-time feet"

● Think of the miles your fleet has covered during war years . . . of the tough punishment your tires, wheels, rims and brake drums have taken with little or no relief, repair or replacement. Think of the strains, stresses and damage . . . of the weaknesses which now invite serious breakdown and accidents. *Think . . . and correct the conditions which threaten to destroy the "feet" of your fleet!*

Somewhere near you, the National Wheel & Rim Association distributor stocks the sturdy, modern and necessary parts to renew the rolling equipment of your vehicles. From his warehouse, you can secure the quality products of nationally-known manufacturer members. He has the proper wheel to replace that worn or bent one, the new and true brake drums that afford longest lining life and sure, safe braking. He can tell you, from scientific knowledge, the tire and rim width combinations that are best for your particular job and to provide greatest tire mileage. He can supply any size or shape of wheel or rim nuts, bolts and lugs you require. Parts for all model vehicles up to ten years or older are "in stock" with your NW&RA distributor.

Indications are that America's present fleets of trucks and trailers, commercial delivery cars, buses and agricultural equipment must continue to bear the brunt of service for months to come. Depend upon the wheel and rim distributor who displays the NW&RA sign to help you keep 'em rolling . . . *to put your fleet on its "feet!"*

NATIONAL WHEEL & RIM ASSOCIATION
3315 Locust Boulevard St. Louis 3, Mo.



Sixty NW&RA distributors from coast to coast make efficient service available as near as your telephone.



Adequate stocks of wheels, rims, brake drums and parts are available quickly for essential replacements.



Field engineers with scientific knowledge to aid you with your problems, await your call.



Helpful data and indexed catalog materials provide proper selection of repair and replacement items.

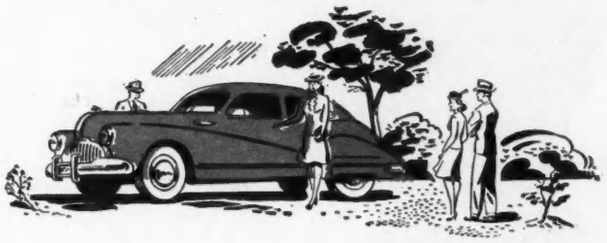
FOR GREATER TIRE MILEAGE . . . ASK FOR DETAILS ON WIDE-BASE RIMS & WHEELS

You have heard how the new principle of wide base mounting increases tire mileages from 20% to 50%. This is an economy measure originally sponsored by your NW&RA distributor, and proved in actual practice on many fleets. It is a method which produces extra miles from present tires, maximum mileage from new tires. Ask to have correct wide-base specifications figured for every vehicle in your fleet.



THE 1946 BUICK

Spicer-Equipped!





The new 1946 Buick is equipped with Spicer Universal Joints

BUICK—always a great name on the road—has for many years been served in its power delivery needs by Spicer universal joints. Even in war, Spicer units helped give Buick-built combat vehicles a famous name for fast, hard-hitting action. The new 1946 passenger car models are the best Buicks yet—helped in this attainment by the best Spicer equipment yet! No matter what your automotive power transmission needs may be, Spicer has the engineering and manufacturing skill to serve you.

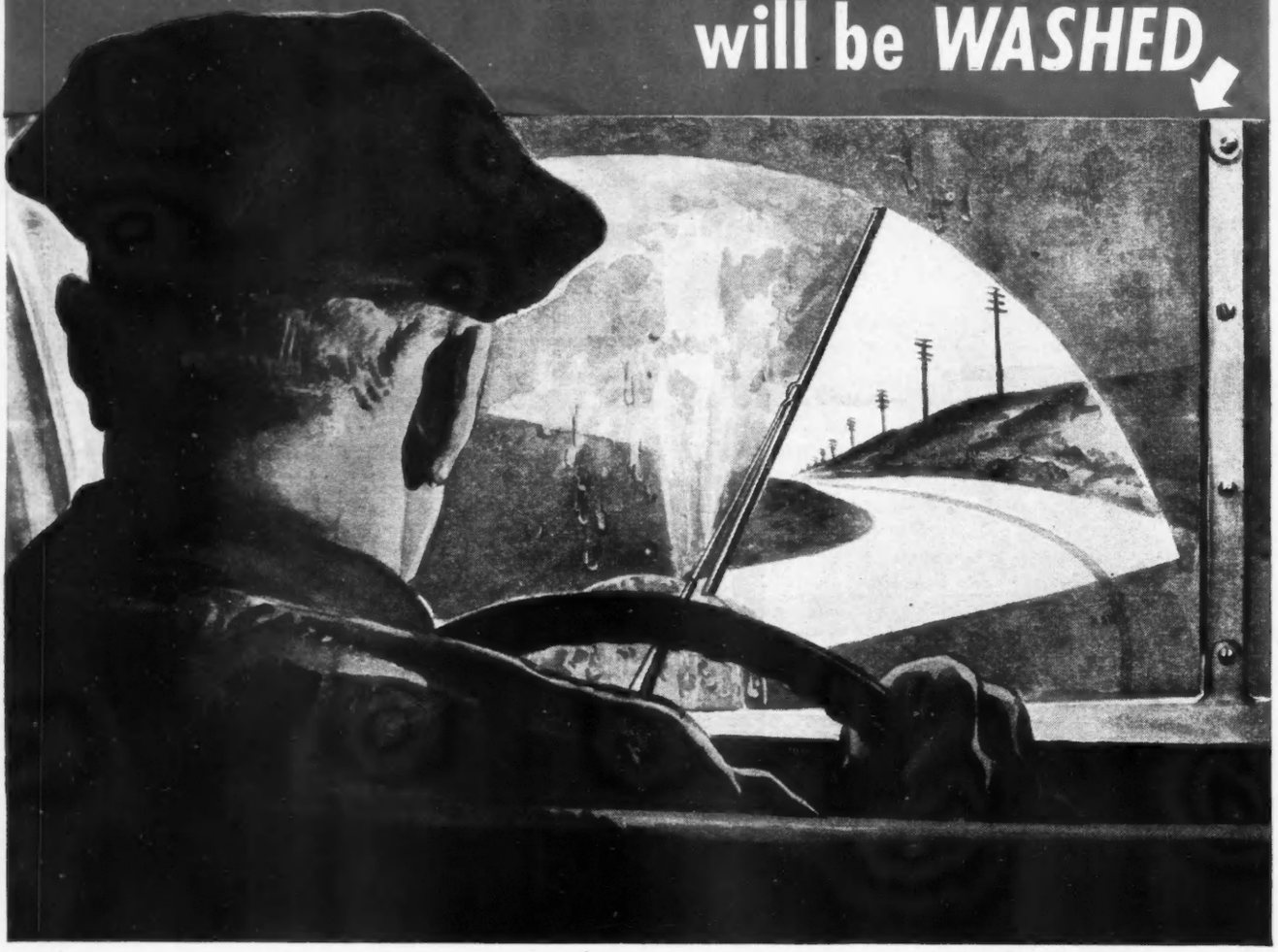
SPICER MANUFACTURING CORPORATION
TOLEDO 1, OHIO

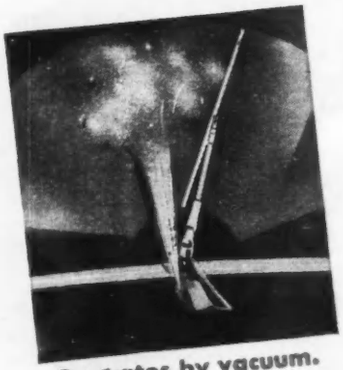
Transmissions • Torque Converters • Clutches • Passenger Car Axles • Universal Joints • Parish Frames • Stampings

42 YEARS OF Spicer SERVICE



In a split second this blinded windshield will be *WASHED*





Operates by vacuum.
Easily installed.

● When thaws muddy the streets and highways, clouds of dirty, grimy spray continually torment the man behind the windshield.

On trucks and buses equipped with Trico's Automatic Windshield Washer, the simple touch of a button eliminates this serious hazard.

Two jets of clean water, or special Trico solvent, squirt onto the glass and the wipers instantly produce a crystal clear windshield.

Save driving strain, save property, save *lives* by installing this inexpensive safety "first." Every truck, every bus *needs* it.

TRICO

Windshield Washer

TRICO PRODUCTS CORPORATION, BUFFALO 3, NEW YORK

FOR PROTECTION OF CARGO, EQUIPMENT AND POCKETBOOK . . . .

PRIOR *Safety* TANK *and* TOOL CHEST SETS



ATTRACTIVE and ECONOMICAL

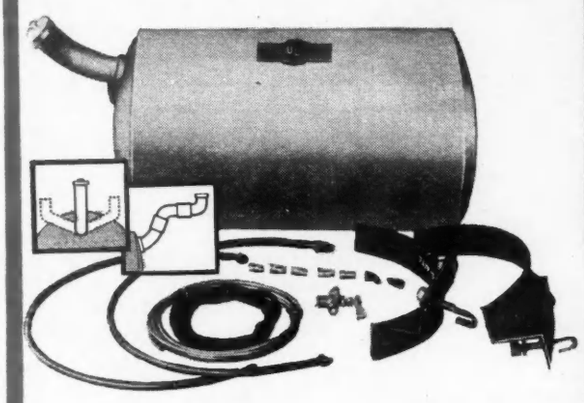
Sturdy construction . . . large fuel capacity . . . a safe and handy place to keep tools . . . a special jack well to keep the hydraulic jack standing up, so that the fluid can't leak out . . . and special curved angle iron suspension to give greater road clearance—those are some of the features of the Prior Safety Tank and Tool Chest Set.

The large fuel capacity means less fueling stops on long runs. The safety fuse plug guards against explosion from fire or excessive heat. The full dished heads and the cylindrical construction give the tanks greater resistance to damage from external causes.

The four-way tread on the tool chest cover makes it a serviceable cat-walk and adds to the attractive appearance of the entire assembly.

Prior Safety Tank and Tool Chest Sets can be installed without drilling any holes in the chassis frame.

This End-Fill Safety Tank Fits any Truck or Bus



This 18" single tank has an *adjustable* end-filler tube that can be adjusted to any right or left angle to fit any truck or bus. It also may be extended and angled to conform to structural details of the bus or truck. It comes complete, ready to install, down to the last nut. *It fits either side of the vehicle.*

ELECTRIC Gas Gauge, with dash indicator, may be had for any Prior Tank. This is optional equipment at extra cost.

When you buy Safety Tanks—buy Prior Safety Tanks.

Prior Products

DALLAS, TEXAS · CLINTON, ILLINOIS

WRITE OR WIRE FOR NAME OF NEAREST DEALER

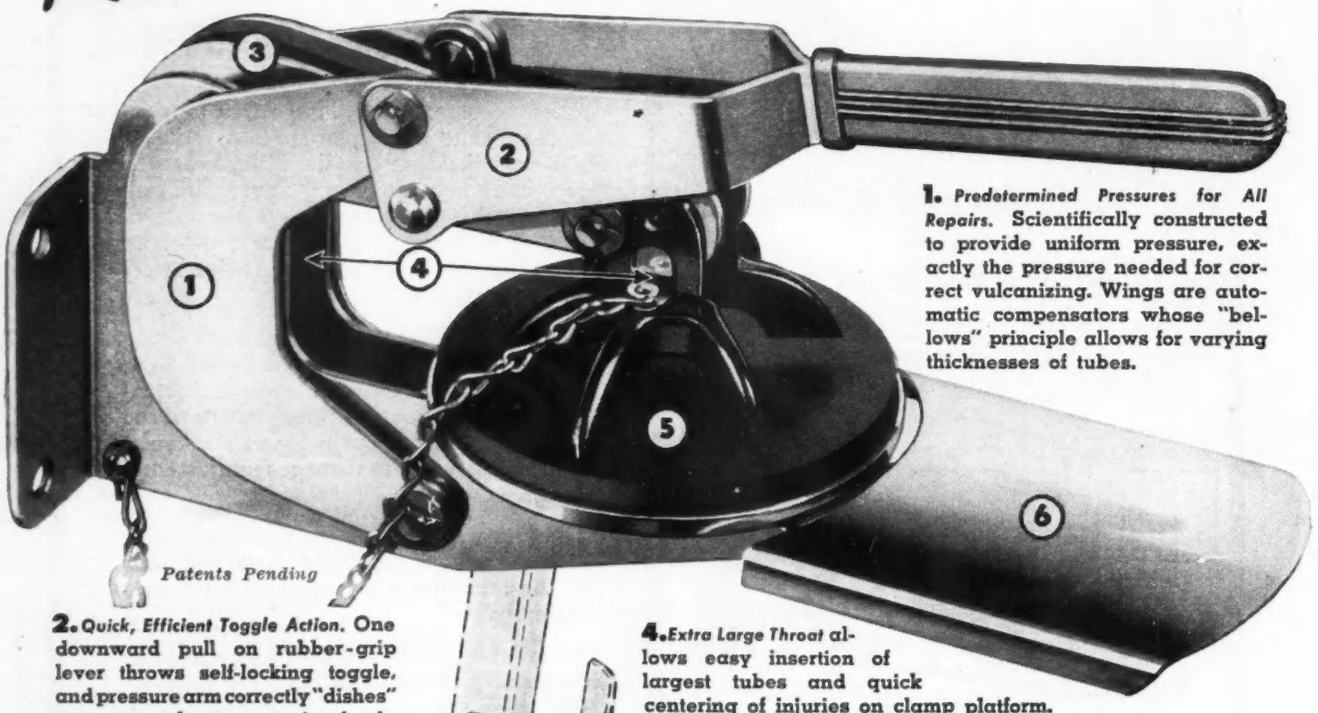
SPEAKER

New!

Match Patch Vulcanizer

Revolutionary ...for Any Patch...for Any Tube Repair

Large Round Patches • Large Oval Patches • Small Round Patches • Small Oblong Patches • Replacement Valves

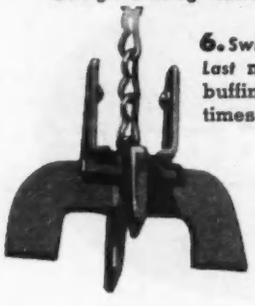


Patents Pending

1. ***Predetermined Pressures for All Repairs.*** Scientifically constructed to provide uniform pressure, exactly the pressure needed for correct vulcanizing. Wings are automatic compensators whose "bellows" principle allows for varying thicknesses of tubes.

2. ***Quick, Efficient Toggle Action.*** One downward pull on rubber-grip lever throws self-locking toggle, and pressure arm correctly "dishes" pan on patch, guaranteeing feather-edge vulcanizing.

3. ***Eight-Bearing Rocker Arm Action.***



6. ***Swing-down Tube Last*** makes proper buffing easy. It's a timesaver.

4. ***Extra Large Throat*** allows easy insertion of largest tubes and quick centering of injuries on clamp platform.

5. ***Rubber Pressure Cushion*** provides the proper amount of upward counter pressure, prevents heat transfer and assures a uniform vulcanizing temperature.

Tough, Extra-Heavy Steel Parts—rustproof, sturdy. No brittle cast iron to crack or cause trouble.

BUILT for long service and fast work, the SPEAKER MATCH PATCH VULCANIZER is like an extra man in your shop.

Unlike screw-type clamps, the SPEAKER MATCH PATCH VULCANIZER *doesn't depend on the operator's strength or judgment for correct pressure.* It eliminates all guesswork, because its pressure is automatically predetermined by toggle action. One downward pull on the lever sets AND LOCKS the pressure pan for an unexcelled feather-edge MATCH PATCH vulcanized repair of any puncture.

The Speaker Match Patch Vulcanizer is modern in design, quick in action, positive in performance — a machine that will make your customers glad to depend on you.

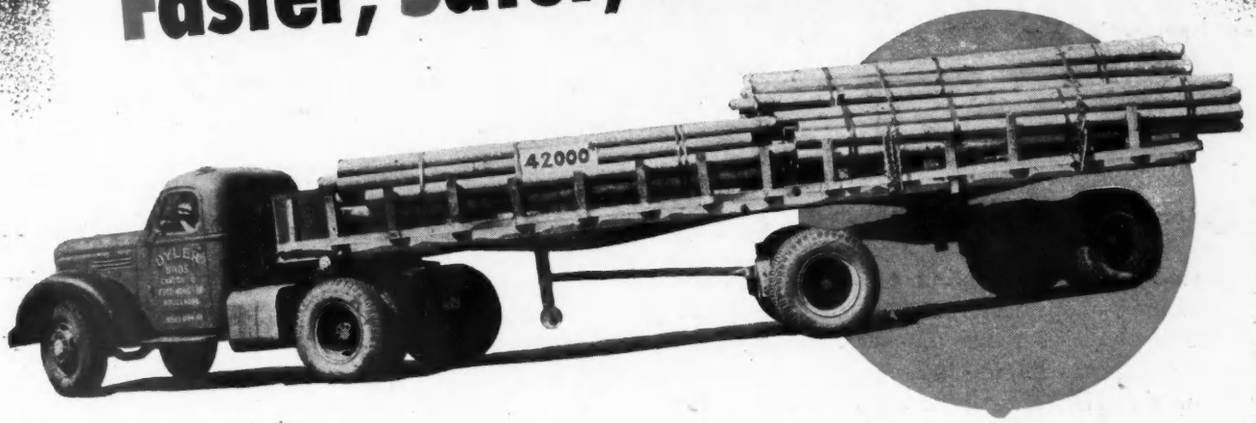


SPEAKER TIRE REPAIRS SPEAK WELL FOR YOU!

J. W. SPEAKER CORP.

3059 NORTH WEIL STREET • MILWAUKEE 12, WISCONSIN

Carry Bigger Payloads Faster, Safer, at Less Cost



with the new HOOBLER UNDERCARRIAGE





FREE
Fully illustrated folder tells all

10 Advantages To Truck Trailer Operators

The new Hoobler Undercarriage shown by itself in the small photo (left), and attached to a 30-foot trailer (above), was designed and produced by skilled engineers as a two-axled, self-steering undercarriage for van, high-side, flat-top and tank semi-trailers 28 feet in length and up.

Its benefits, proved by over 80,000 miles of operation and all kinds of gruelling road tests are: (1) Increases payloads up to 40%; (2) doubles tire mileage; (3) requires less power; (4) permits handling of longer pieces; (5) prevents cargo from shifting on rough roads; (6) cuts running time; (7) increases safety and ease of operation; (8) easy to back; (9) simple in design and construction; and (10) popular with drivers. Designed for use with standard axles, brakes, wheels and tires.

CLIP COUPON—MAIL TODAY

UNION METAL
Builder of The Hoobler Undercarriage

THE UNION METAL MFG. CO., Canton 5, Ohio

Please send me, without cost or obligation, your latest literature picturing and describing the Hoobler Undercarriage.

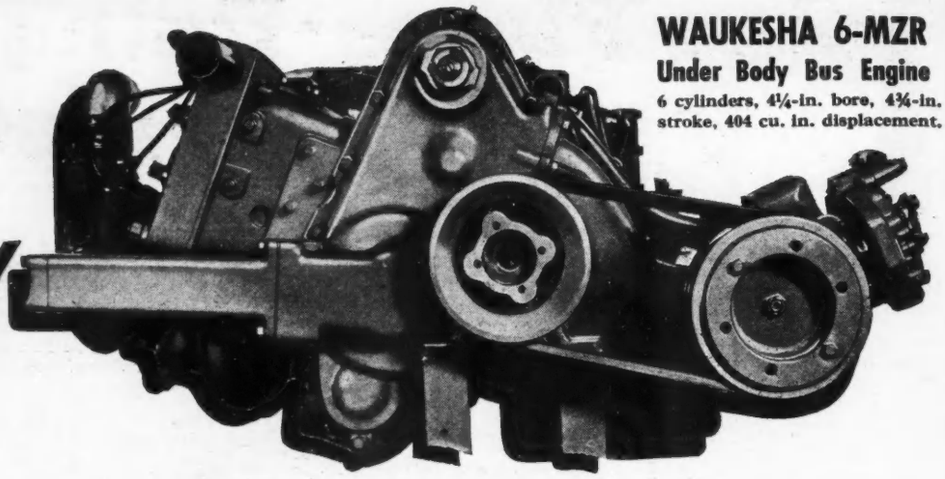
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Company _____

Address _____

DESIGNERS AND PRODUCERS OF STEEL PRODUCTS SINCE 1906

now



WAUKESHA 6-MZR
Under Body Bus Engine
6 cylinders, 4¼-in. bore, 4¾-in. stroke, 404 cu. in. displacement.

Southern Coaches get *MORE* Carrying Capacity

Increased passenger carrying capacity means more revenue for bus operators. Here's a city bus that fully utilizes its interior space for passenger traffic. Its special Waukesha Engine is mounted under the bus floor on three bonded rubber supports. All ordinary maintenance operations are done conveniently from below the coach or through a large inspection door in the floor.

These power plants are 6-MZR Waukesha Engines converted for low-height installation. Major parts of standard vertical Waukesha Engines are used, with a few special adaptations developed by the engineers of the Kenworth Motor Truck Corporation, Seattle, Wash., who have licensed these bus manufacturers.

At the present time all of their buses are being operated under heavy overload conditions say the manufacturers—Southern Coach Manufacturing Co., Evergreen, Ala. Yet their customers assure them that these Waukesha-powered buses are outstanding in performance.

Consult Waukesha's engineering development staff about your special problems and engine needs.



Waukesha Engine powered Model F-31 city bus built by Southern Coach Manufacturing Company, Evergreen, Ala.

WAUKESHA ENGINES

WAUKESHA MOTOR COMPANY, WAUKESHA, WISCONSIN • NEW YORK • TULSA • LOS ANGELES

Going Places · Doing Things as NEVER BEFORE!



Constant development and improvement in Tru-Lay Push-Pull units is greatly extending their range of applications. Capacities have been increased. Standard Tru-Lay Push-Pull controls are today giving dependable, trouble-free service on work that previously required elaborate and expensive controls. For specific information, write our Detroit office.

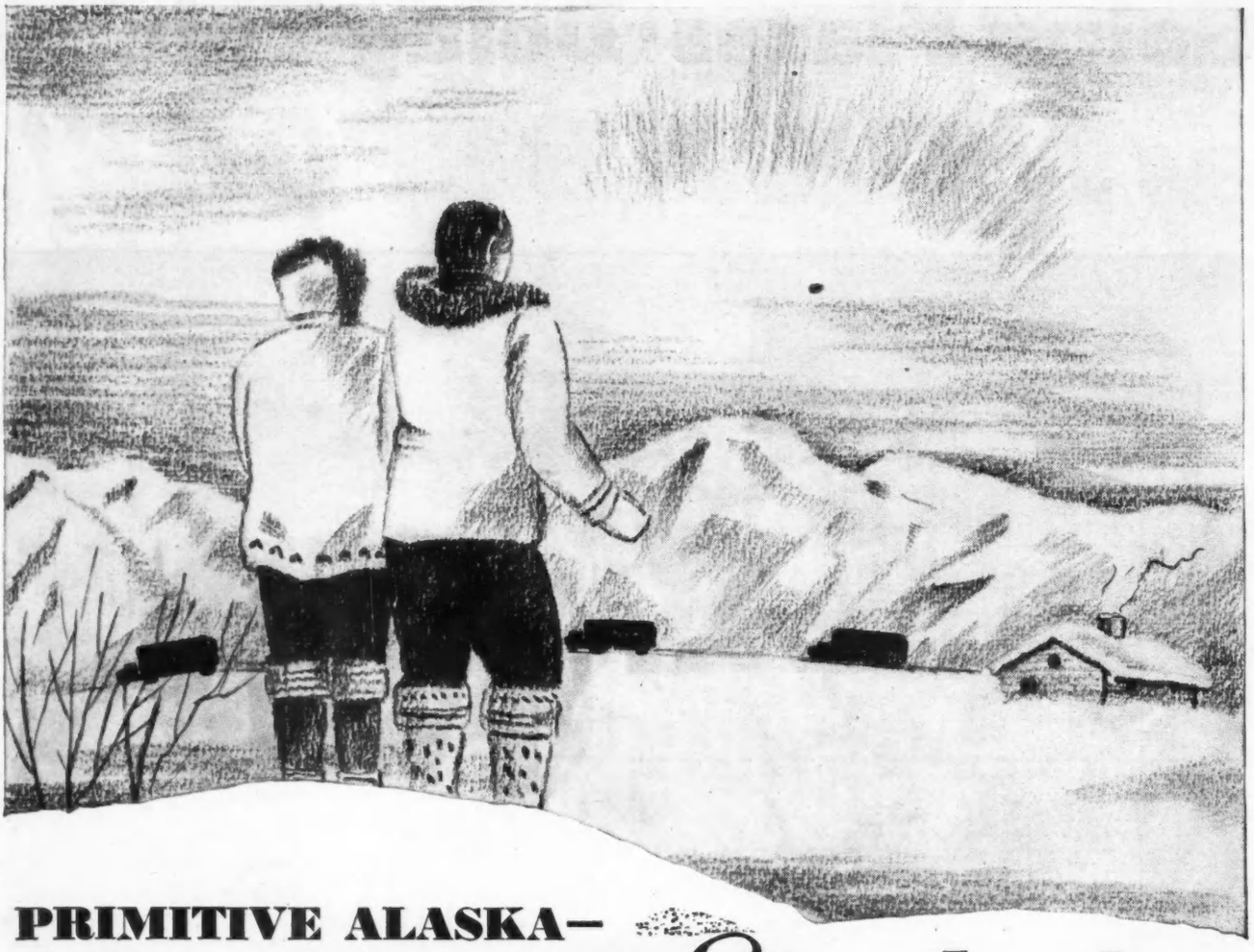
ACCO

6-235 General Motors Bldg., Detroit 2 • 695 Bryant Street, San Francisco 7 • Bridgeport, Conn.

AUTOMOTIVE AND AIRCRAFT DIVISION
AMERICAN CHAIN & CABLE

TRADE MARK

In Business for Your Safety



PRIMITIVE ALASKA— another proving ground for *Standard* TRAILER AXLES

Highballing freight over "bottomless" Alaskan roads is the kind of job at which *Standard* Trailer Axles show up best. There they ground out mile after mile of trouble-free service establishing a reputation for excellence.

"BE SURE *Your* AXLES ARE *Standard*"

Built to be interchangeable with standard axles . . . and to military specifications . . . *Standard* axles are the choice of maintenance men and trailer production experts. Write today for full details.

Standard Forge & Axle Company

MONTGOMERY 2, ALABAMA

AXLES BRAKES FORGINGS TRAILER PARTS

THROWS SNOW *Farther*
because it Clears Faster!

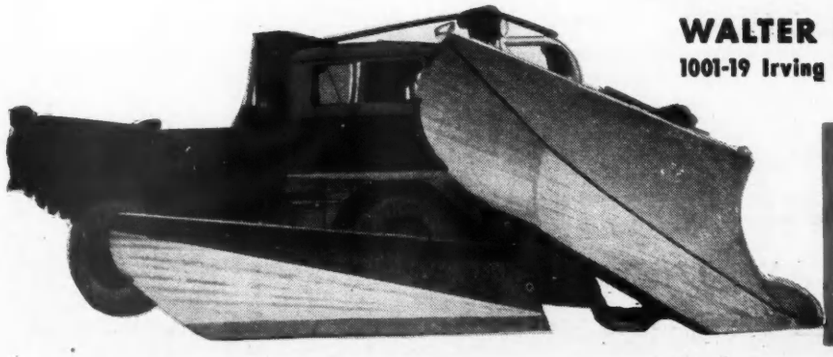


WALTER SNOW FIGHTERS
Clear a 28 ft. Lane at 20-30 m.p.h.

● You clear more miles per hour with Walter Snow Fighters because they remove a greater volume of snow on each run. Having the power and traction to maintain speeds of 20 to 30 m.p.h., Walter Snow Fighters throw snow far off the road. Less snow remains to be re-handled on subsequent runs. Widening out is easier and faster. Danger of frozen ruts and ice is diminished. In fact, a two-lane road can be cleared in ONE round trip with the 250 h.p. Walter Snow Fighter.

Only Walter Snow Fighters provide this high-speed performance because they have the exclusive Walter Four-Point Positive Drive, which proportions the power to the FOUR driving wheels according to their traction at any instant. This eliminates wheel spinning and prevents skidding, stalling and side slipping. It enables drivers to hold a straighter course at high speeds and in deep snows.

Write today for a complete description of the many features that make Walter Snow Fighters the most effective weapon against snow-clogged highways.



WALTER MOTOR TRUCK COMPANY
1001-19 Irving Avenue, Ridgewood 27, Queens, L. I., N. Y.

WALTER
SNOW FIGHTERS



MADE STRONG
To Stand Recapping

The main reason truck and bus owners get maximum service from Mohawk Tires is that the carcass of a Mohawk Tire is made extra strong to stand recapping. Unless seriously injured, it is good for at least two new treads, sometimes more.

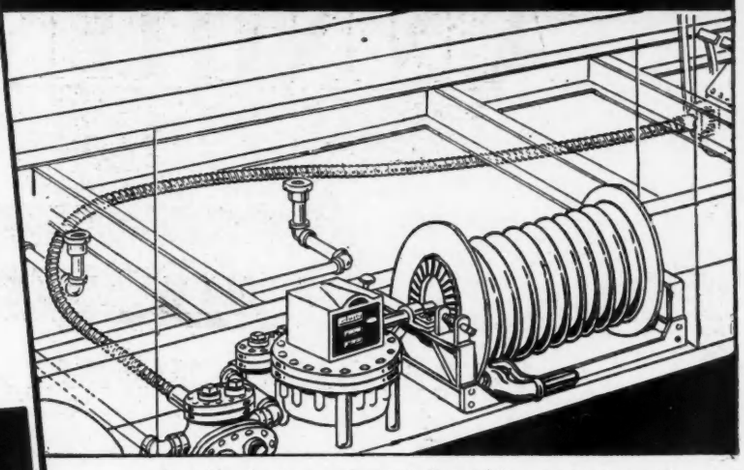
Fleet owners report they get the service of two extra tires for only two-thirds the price of one by having their Mohawk Tires recapped twice with Mohawk Special Truck Tire Capping Stock.

Mohawks Go Farther

THE MOHAWK RUBBER COMPANY
AKRON 5, OHIO

RELIABLE, SAFE *Tank Pump* operation

✓ Avoids Lay-ups
✓ Minimum Maintenance
✓ Easily Installed
✓ Thoroughly Proved in Use.



Adaptable also to pumping units located in rear compartment.

STOW FLEXIBLE SHAFT TANK PUMP DRIVE

Specify it as original equipment!

Insist upon it as Replacement Equipment!

10 REASONS WHY . . .

1. The pump can be installed wherever most convenient for frequent inspection, regular lubrication, and proper attention to packing!

2. Pump, meter, and reel can be assembled as a compact unit *anywhere* on the truck!

3. The smooth working of the Stow Flexible Shaft minimizes wear on pump packing and bearings—helps avoid leaky pumps!

4. Stow Flexible Shaft reduces end thrust on power take-off and pump shafts—keeps maintenance at a minimum!

5. Requires less piping—cuts piping costs—fewer joints result in less leakage!

6. Totally enclosed shaft assures complete safety!

7. Use of Stow Flexible Shaft saves lay-ups—keeps trucks in continuous operation—assures trouble-free service!

8. Stow Flexible Shaft automatically compensates for relative movement between the pump and power take-off resulting from distortion of the chassis frame caused by uneven roads!

9. Stow Flexible Shaft is engineered to absorb all shock loads!

10. Stow Flexible Shaft can be installed by any mechanic. The facilities of an ordinary garage are adequate. Installation cost is a fraction of that of any other drive!

Write Now For Full Information

STOW MANUFACTURING CO.
Binghamton, N. Y.

STOW MANUFACTURING CO.,
38 Shear St., Binghamton, N. Y.

Please send me at once full information about STOW Flexible-Shaft Tank Pump Drive.

Name.....
Position.....
Company.....
Street.....
City.....State.....

ANNOUNCING

A *NEW* VISCOUS TORSIONAL VIBRATION DAMPER

for internal combustion engines of all sizes

Houdaille announces an entirely new type of Torsional Vibration Damper.

It has only three parts—a damper mass, its housing, a bronze bushing.

It is viscous—using the newly developed Silicone fluid which was chosen for its inherent stability and nearly flat viscosity curve.

It is untuned—so that it minimizes BOTH major and minor critical orders of vibration.

It is non-critical—so that it is not sensitive to temperature variations.

It *damps*. It is *not* a de-tuner.

Simple as it is, it solves torsional vibration problems more ideally than any other device.

It will, we believe, outlast the life of the engine.

Designed and produced exclusively by Houdaille, the new Torsional Vibration Damper should prove one of the most important engineering discoveries of recent years.

Our engineers gladly will design a Houdaille Viscous Torsional Vibration Damper to meet the requirements of specific engines—of any size—in the internal combustion field.

HOUDE ENGINEERING DIVISION OF
HOUDAILLE-HERSHEY CORPORATION
MAKERS OF HYDRAULIC CONTROLS
BUFFALO 11, NEW YORK

Fast on all body jobs!

SKILSANDERS

Economical to run!



$53

MODEL "N"

7 in. Special Duty Disc Type SKILSANDER. No-load speed 4200 R.P.M. Net weight only 10½ pounds.

$73

MODEL "G"

7 in. Heavy Duty Disc Type SKILSANDER. No-load speed 3600 R.P.M. Net weight only 12½ pounds.

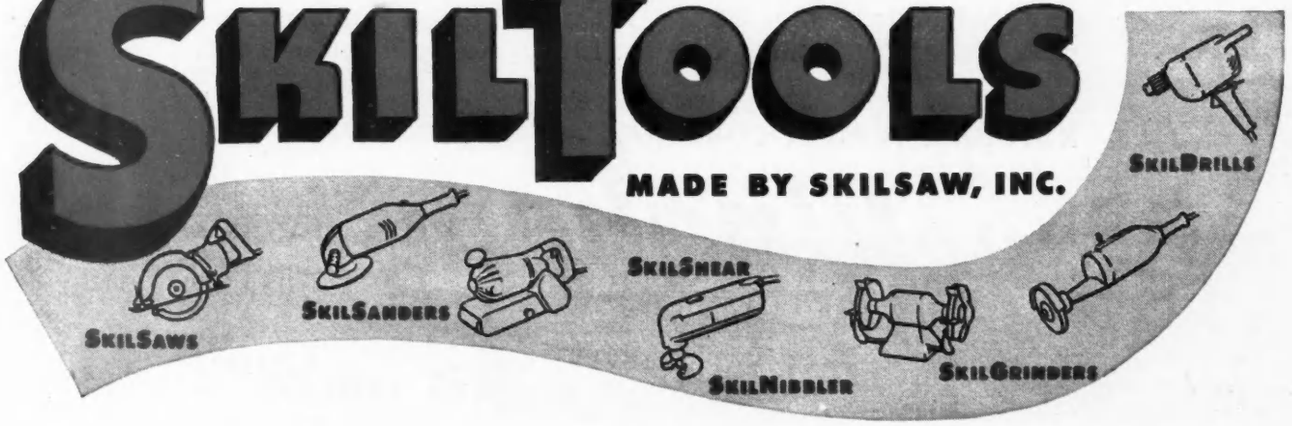
● Extra power is built into every SKILSANDER for top load speed on every body job . . . and many refinements, such as full-enclosed brush and commutator compartments, assure long life and low operating cost. There's a SKILSANDER model for every finishing job in every shop . . . including a 2-speed sander-polisher. Call your jobber today for a demonstration . . . and be sure to specify SKILSANDERS by brand name.

SKILSAW, INC.
5033-43 Elston Ave., Chicago 30, Ill.
Factory Branches in All Principal Cities

PORTABLE ELECTRIC

SKILTOOLS

MADE BY SKILSAW, INC.





STRENGTH

Take a good look at the STRENGTH and DURABILITY built into these Kingham Trailer Units! See them at your dealers! You'll agree they're 'tops' for DEPENDABILITY!

Solid as a rock of granite . . rugged as the old Wild West . . and powerful as a giant lumber-jack . . that's the STRENGTH of the Kingham Trailer Units. For, right from the ground up—these famous products are built to do a job . . and do it right! Combining only the best in brain and brawn . . each mighty Kingham is made to out-last and out-perform any similar Trailer Unit on today's road.

Why not avail yourself of the best . . it costs no more! See the Kingham at your Dealer . . today!

KINGHAM TRAILER COMPANY, INCORPORATED **LOUISVILLE, KY.**

NATIONAL SALES **Kingham UNIVERSAL** NATIONAL SERVICE

"A Load Behind is a Trip Ahead"



WILL IT BE SEEN IN TIME?

Hazards come up fast on the highway.

Such situations call for quick seeing. And quick seeing calls for clearer visibility.

Cracks or discoloration in windshields or windows make seeing more difficult—contribute to highway danger. For safety's sake, check your fleet *regularly* for glass that needs replacement.

Replace cracked or discolored glass with L·O·F HI-TEST SAFETY PLATE GLASS

This high-quality product is made of two panes of plate glass, ground and polished for maximum freedom from distortion and held together with clear, tough plastic.

Specify L·O·F Hi-Test Safety *Plate* Glass—in windshields *and* windows—for replacement and for your new equipment. Libbey·Owens·Ford Glass Company, 7126 Nicholas Building, Toledo 3, Ohio.

WHEREVER VISION IS IMPORTANT
USE L·O·F *Polished Plate* GLASS

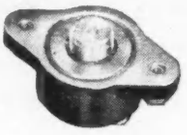
L O F **LIBBEY·OWENS·FORD**
a Great Name in **GLASS**



Automatic reset
2-40 amps



Manual reset
35-150 amps



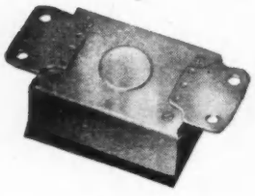
Manual reset (weather-proof) — 35-150 amps



Automatic reset (weather-proof) — 15-40 amps



Manual reset
2-35 amps



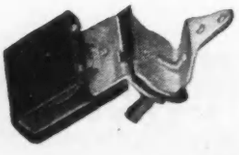
Automatic reset
105-200 amps



Switch type
35-120 amps



Manual reset (indicating button) — 5-50 amps



Automatic reset
20-40 amps — 12 V. D.C. max.

KLIXON

CIRCUIT BREAKERS

Safeguard Electrical Circuits

- ***Open Circuit should harmful short or overload occur***
- ***Avoid nuisance tripouts***
- ***Eliminate fuses and need of spare fuses***

You can now get *permanent* protection against overloads and short circuits by installing Klixon Circuit Breakers in all circuits . . . lights, heater, radio, trailer, directional signal and other accessory circuits.

These compact, dependable circuit breakers "open" the circuit should a harmful short or overload occur thus preventing damage to the electrical system. They carry full rated current without nuisance tripouts. And because they are permanent protective devices which will repeatedly interrupt overloads and shorts, Klixon Breakers eliminate the need for carrying spare fuses.

Actuated by the Spencer thermostatic disc, Klixon has nothing to burn out . . . nothing to replace. They simply snap the circuit "off" when dangerous overload occurs . . . snap it "on" when the circuit cools, either automatically or by manual reset depending on the type of breaker used.

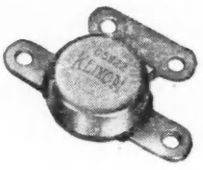
Positive screw type connections and low resistance silver contacts eliminate excessive voltage drop often encountered with fuse clips due to corrosion.

Investigate military-proved Klixon Circuit Breaker protection, today. For information and samples write:

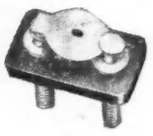
SPENCER THERMOSTAT COMPANY
1602 Forest Street, Attleboro, Mass.



Switch type
2-35 amps



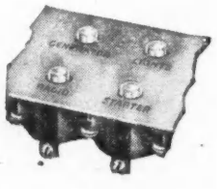
Automatic reset
20-50 amps — 12 V. D.C. max.



Automotive Automatic reset
10-35 amps — 12 V. D.C. max.

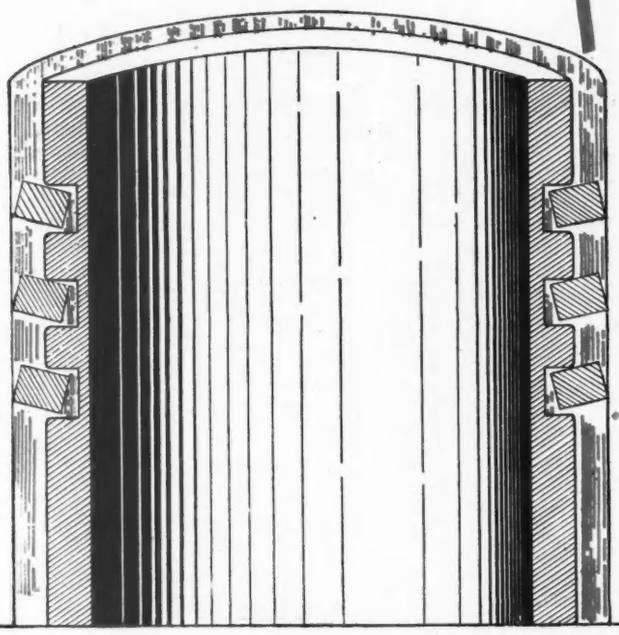


Automatic reset
6-15 amps — 12 V. D.C. max.



Typical Circuit Breaker
Panel Installation

Diesel Engine DANGER points



"ROCKING" PISTON RINGS SCORE LINERS

"Rocking" piston rings, the result of excessive wear in the ring grooves of Diesel engine pistons, are the source of considerable lay-off time and expense to Diesel operators—Wear-enlarged grooves permit rings to rock, and "bite" into cylinder walls. The result is usually a costly overhaul to replace not only pistons, but worn liners as well. It's a danger point in many Diesels—but "rocking" rings and their cause, enlarged ring grooves, can be minimized.

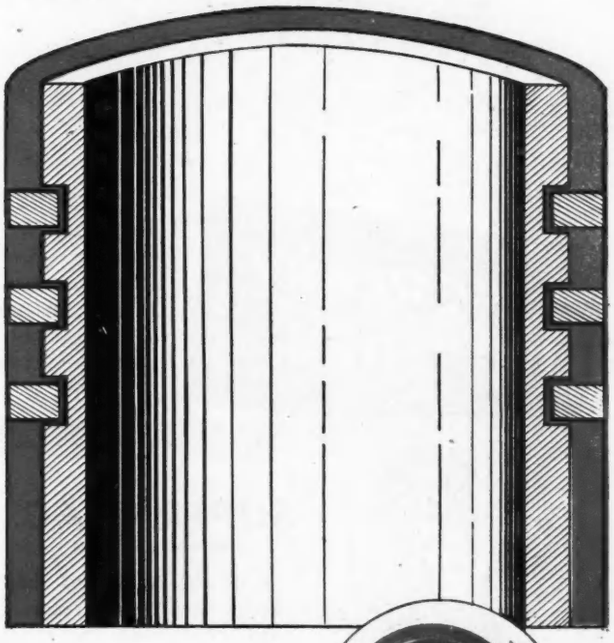
RPM DELO Oil clings to hot engine areas often left exposed to wear by ordinary uncompounded oils.

RING GROOVE WEAR REDUCED BY RPM DELO OIL

In a series of 1000-hour laboratory tests, Standard scientists proved that ring groove wear can be minimized with RPM DELO Diesel Engine Lubricating Oil.

Piston ring groove wear in an engine operated on a top quality straight mineral oil was thirty times that experienced with RPM DELO Oil in an identical test.

RPM DELO Oil reduces wear due to a metal-adhesion additive which makes it cling to and lubricate hot engine areas other oils often leave bare, and to other compounds which eliminate stuck rings and engine deposits, prevent bearing corrosion, stop oil foaming.



To match the fine performance of RPM DELO Oil use these equally efficient companion products from the same famous "RPM" line—

RPM HEAVY DUTY MOTOR OIL
RPM COMPOUNDED MOTOR OIL
RPM GEAR OILS & LUBRICANTS
RPM GREASES

For additional technical information write Dept. T-X, Standard of California, San Francisco 20, California, or California Commercial Company, 30 Rockefeller Plaza, New York 20, N.Y.

STANDARD OF CALIFORNIA



McCREARY TIRES
"Built for Longer Service"

PROVEN BY REAL PERFORMANCE on *big fleets* for the past 30 years, McCreary SUPER SERVICE and SUPER TRANSPORT tires have consistently exceeded normal mileage expectancy by a wide margin. There are definite reasons for this performance. The best of materials—pre-stretched rayon cord, finest grades of natural and synthetic rubber, processed under the most scientific methods—plus careful handling—provide a *stronger, more durable* carcass. This means *more* original miles . . . *more* recaps per casing . . . *more* miles on every recap!



SUPER MAC Says:

(The McCreary Man)

"IT IS NO ACCIDENT that such a large percentage of McCreary Tires are distributed through the recappers. This is our pledge: *In the years to come, with new materials and new conditions, McCreary Tires will always be built with the requirements of the recapper among the top considerations."*

① McCREARY SUPER TRANSPORT TIRE

Scientifically designed to meet all trucking requirements. The tread is especially well adapted for front-wheel or trailer use, but will give dependable traction on drive-wheels as well. Pre-stretched rayon cord gives greater protection against blow-outs.

② McCREARY SUPER SERVICE TIRE

Designed for general purpose wear, featuring a non-skid, high-traction tread. High, rugged shoulders protect the carcass from stones and ruts, while deep side channels provide better traction in snow and mud.

McCREARY TIRE AND RUBBER COMPANY - INDIANA, PENNSYLVANIA

NOW...

Streamlined Cabs with Curved Safety Glass

MAKE POSSIBLE WIDER VISION, GREATER SAFETY, WHEN USED IN NEW STREAMLINED WINDSHIELDS IN TRUCK AND TRACTOR CABS.

THE TREND toward streamlining is an increasingly important factor in truck design. And greater latitude in cab design is made possible by some of the new developments of "Pittsburgh". Prominent among these advances is the mass production of bent and curved Duplate Safety Plate Glass, which contributed so importantly to the streamlining of our combat aircraft.

The proven high quality of Duplate Safety Plate Glass is the result of our unexcelled research and production facilities and our many years of experience in manufacturing safety glass of every description to meet the changing needs of the transportation industry. With its companion product, Duolite Safety Window Glass, it has rolled up performance records in the trucking industry that are your best guide to a dependable source of supply for all sorts of safety glass.

Now is the time to get full information on the latest developments in Safety Glass by "Pittsburgh". Whatever your requirements may be—for new truck and tractor cabs and for replacements—for flat, bent, or curved panels, they can be met by Duplate Safety Plate Glass and Duolite Safety Window Glass. Both can be readily obtained through our nationwide system of branches and dealers. Pittsburgh Plate Glass Company, 2107-6 Grant Building, Pittsburgh 19, Pennsylvania.

Safety Glass

BY "PITTSBURGH"

"PITTSBURGH" stands for Quality Glass and Paint

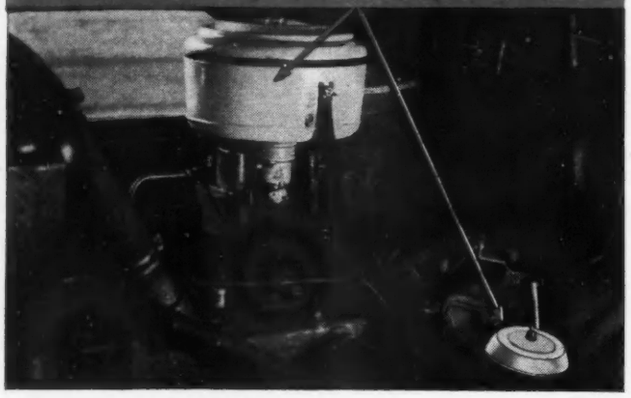
PITTSBURGH PLATE GLASS COMPANY

Reduce Engine Wear!

WITH AN **AIR-MAZE**

Automatic

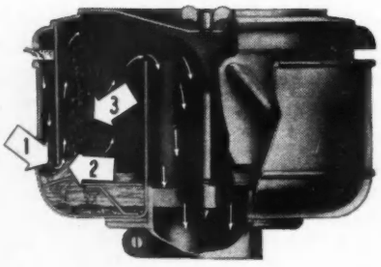
Oil Bath Air Filter



- **Triple cleaning action keeps dirt from entering engine!**
- **Protects cylinders, rings and bearings from abrasion!**
- **Reduces oil sludge and engine deposits!**
- **Filter always clean—it's washed in oil!**

There's an Air-Maze Oil Bath Air Filter for every size engine, heavy-duty or light; direct or remote, mounted with brackets for easy installation. Insures efficient filtration without danger of clogging.

Cleans Automatically



1. Incoming air is automatically scrubbed in oil, filtered through special screen filter element.
2. Filter screen element automatically bathed in oil, washing dirt down to sump.
3. Three to 5 times greater filter area results in negligible resistance to air flow.

Get double protection with this Air-Maze Breather-Filter



As further insurance against sludge formation, Air-Maze Breather-Filters clean all the air entering the crankcase, thus protecting the oil. Used as filter cap.

For complete information and prices, write to us now. Air-Maze Corporation, Cleveland 5, Ohio.

AIR-MAZE
Engineered Air Filtration

6 BULLETINS on

BALL BEARINGS — their installation, use and maintenance. Available to shop men and maintenance men.



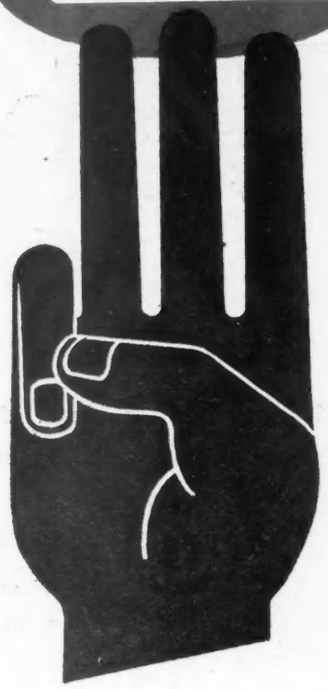
SENT ON YOUR REQUEST;
ask for set of 6 Shop Bulletins

M-R-C BALL BEARINGS

MARLIN-ROCKWELL CORPORATION

Executive Offices: JAMESTOWN, N. Y.

AMEROID



3 RADIATOR MAINTENANCE ITEMS THAT MEAN *Big Savings for You!*

Regular radiator care pays off in longer radiator life—improved operating efficiency, and less *in-shop* time—radiators are quickly, economically cleaned and "conditioned" with widely-used AMEROID Products.

These three simple maintenance measures can help keep your transportation "on the road" for longer, trouble-free periods.

AMEROID
RADIATOR CLEANSER*
quickly, safely removes rust, scale and all insulating deposits of grease and oil—eliminates lay-ups and costly repairs caused by clogged radiator cores—blocked water passages.

AMEROID
AUTO WATER TREATMENT
protects with one application all metals in the cooling system against rust and corrosion for an entire season.

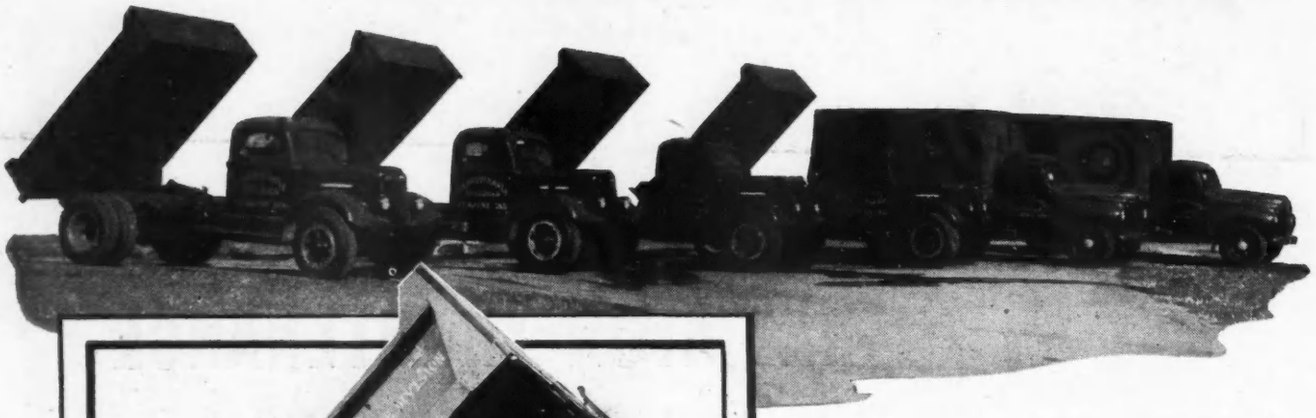
AMEROID
AUTO RADIATOR SEAL
repairs and seals leaks in radiators, pump and hose connections—in gaskets and cracked water jackets. It is harmless to all types of metals and rubber hose connections.

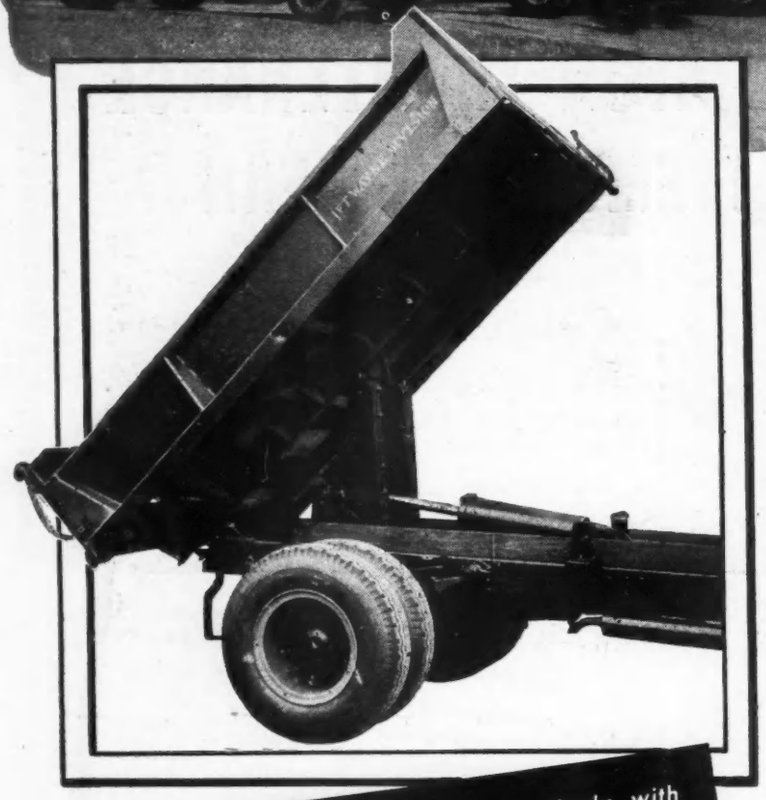
*Protected by Patent No. 2036848

E. F. DREW & CO., Inc.
Automotive Products Division
15 East 26th Street, New York 10, N.Y.
Chamber of Commerce Bldg., Boston 10, Mass.
919 North Michigan Avenue, Chicago 11, Ill.
Canada: Automotive Products Div., University Tower Bldg., Montreal

GET AMEROID TRIPLE RADIATOR PROTECTION!

NO BED OF ROSES





Hercules WD-12 heavy duty dump body, with pyramid type steel side braces and heavy boxed corners. This unit, of four cubic yard capacity, is equipped with a Hercules 8X Hoist.

There's a long, rugged life ahead of these new Hercules units . . . long hours and punishing service under the most difficult operating conditions. That's what railroad construction and maintenance of way work means . . . constant, driving work, day after day, with every job marked "Rush". But these heavy duty bodies and hoists will measure up to the task because each unit is designed and built for the toughest kind of service. All the jobs, under any conditions, will be finished on time and right.

Whether your haulage work is as difficult as this or not, it's nice to know that your equipment, built by Hercules, will deliver a full measure of satisfactory, low-cost service every day. Whatever your haulage problem, there's a Hercules unit built to help you get the work done in less time and at lower cost. Write today for complete information.

Address inquiries to Dept. K

●

HERCULES

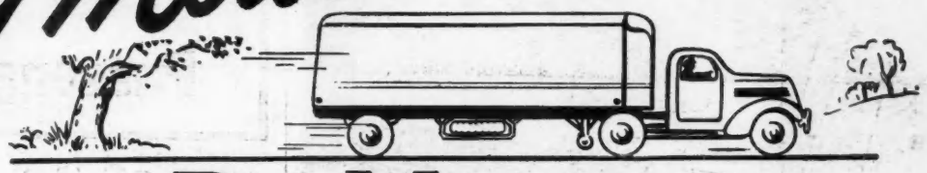
DUMP BODIES AND HYDRAULIC HOISTS
SPLIT SHAFT POWER TAKE-OFFS • COAL CONVEYORS

ONLY HERCULES HAS *ALL* THESE FEATURES

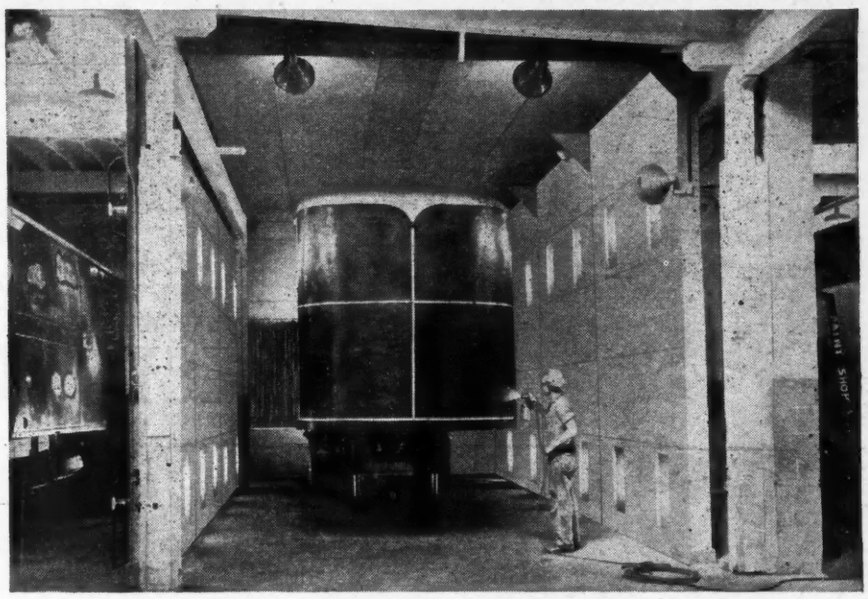
Center-Lift Hoist • Reversible Tailgate Hardware • Piston-Type Control Valve Hoist Mounts Above Frame • Easy-Reach Tailgate Lever • Accessible Hoist Cylinder Dash Controls for Hoist and Take-Off Patented Tire and Tool Pack

HERCULES STEEL PRODUCTS COMPANY . . . GALION, OHIO

Going Modern



with DEVILBISS



Highballing Fruehauf Trailers through the Paint Conditioning Process

Here's a modern idea for fleet owners who want more speed in their paint conditioning operations. It's one of the latest DeVilbiss-designed paint shops.

This new DeVilbiss paint shop uses the modern, more efficient water wash exhaust system to assure thorough removal of vapors and dust from the painting area. Specially designed lighting facilities provide better visibility everywhere in the room and mean faster work and better results.

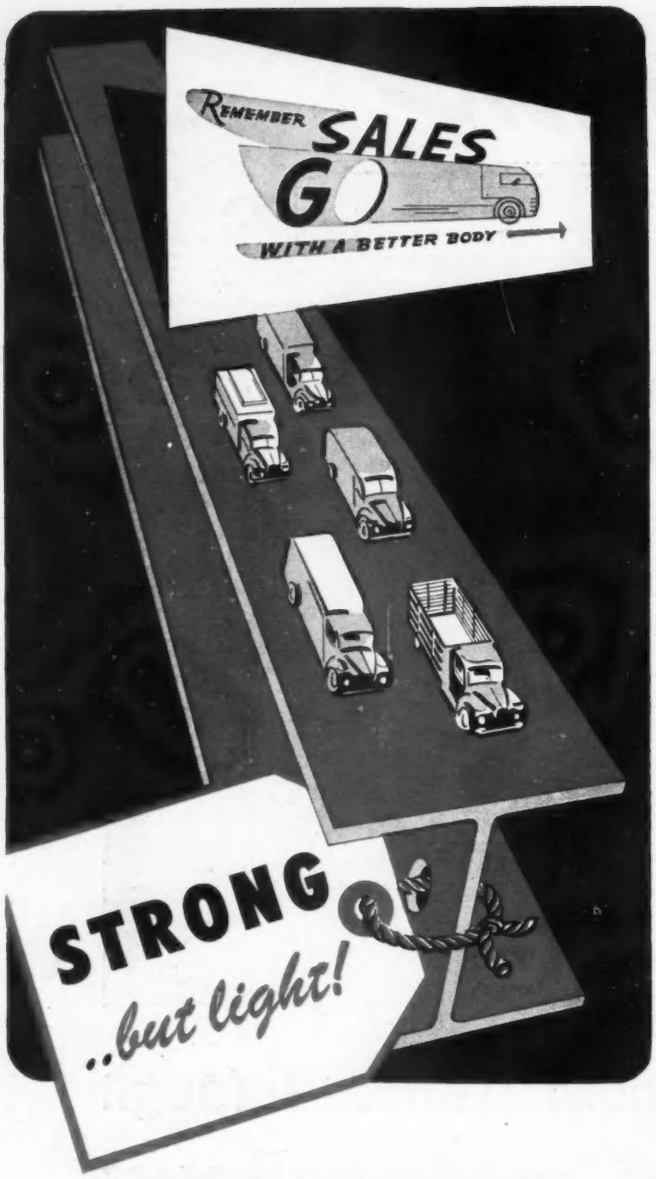
More and more fleet owners are modernizing their paint shops to keep their trucks looking new, to speed paint conditioning and to prevent costly rust damage. And they are finding DeVilbiss ready to help them with new and better painting equipment. Your DeVilbiss distributor will be glad to tell you all about it.

The DeVilbiss Company, Toledo 1, Ohio
Canadian Plant: Windsor, Ontario

DE VILBISS

means **Quality** *in all four..*

SPRAY EQUIPMENT
EXHAUST SYSTEMS
AIR COMPRESSORS
HOSE & CONNECTIONS



A steel beam is among the strongest things there are, but it wouldn't be much good for truck body building where *strength plus lightness* is essential.

DEKALB special bodies are the result of long and painstaking research to find new types of steel structure that will enable us to build bodies that must be strong . . . *should* be light.

If you want more efficient delivery of your product, less time from your factory to the consumer and less maintenance costs, there's an engineered DEKALB body in your future plans.

WATCH FOR AN EARLY RELEASE!

DEKALB
COMMERCIAL Body CORPORATION
Tomorrow's designs for Today

DEKALB, ILLINOIS

Simple Way to Lower Cost per Ton or Passenger Mile . . .



Standardize on KESTER Cored Solders

• Solder may seem a little item—but it can make the difference between low cost operating efficiency and costly "lay ups" and frequent repairs. That's why the *more closely* maintenance costs are figured the *more certain* you are to find Kester Cored Solders in the Service Shop.

• Kester Cored Solders save shop time. (1) Because the pure solder alloy with self contained flux makes application easier – faster – virtually mistake-proof. (2) Because the clean, tight solder bond is permanent, standing up under road shock, bending, vibration and even the contraction and expansion of temperature extremes.

• For all electrical work you can safely depend on Kester Rosin-Core Solder. Its scientifically compounded patented plastic core will not injure insulation nor start corrosion that creates electrical resistance and fire hazard from short circuits. For repairing fuel lines, radiators, and general metal maintenance, use Kester Acid-Core Solder.

• Order Kester Cored Solders from your wholesaler!

KESTER SOLDER COMPANY
4205 Wrightwood Avenue, Chicago 39, Ill.
Eastern Plant: Newark, N. J.
Canadian Plant: Brantford, Ont.



KESTER
Cored Solders
FOR EVERY AUTOMOTIVE USE

Thousands of Extra Miles in a Wausau ring job —because



Oil-savrs do not CARBONIZE!

Every repairman knows that *rapid carbonization* is a major cause of premature oil ring failure.

Such failures don't happen with a Wausau Oil-Savr ring job!

Carbon doesn't form in Oil-Savr's open-throated, heat-dissipating *action alloy* center unit.

That is why it is commonplace for Wausau ring jobs to deliver many thousands of *extra* miles beyond expected performance.

Independent tests by engine manufacturers prove Oil-Savr's practical immunity to carbonization. Comparative tests in scores of large commercial fleets have conclusively demonstrated it.

Oil-Savrs save time in installation . . . they cannot break or fracture. Their exclusive patented design provides light, uniform pressure distribution, maximum power and motor flexibility.

Oil-Savrs are available in custom-made, *engineered* sets for most makes of motors, wide ranges of cylinder wear.

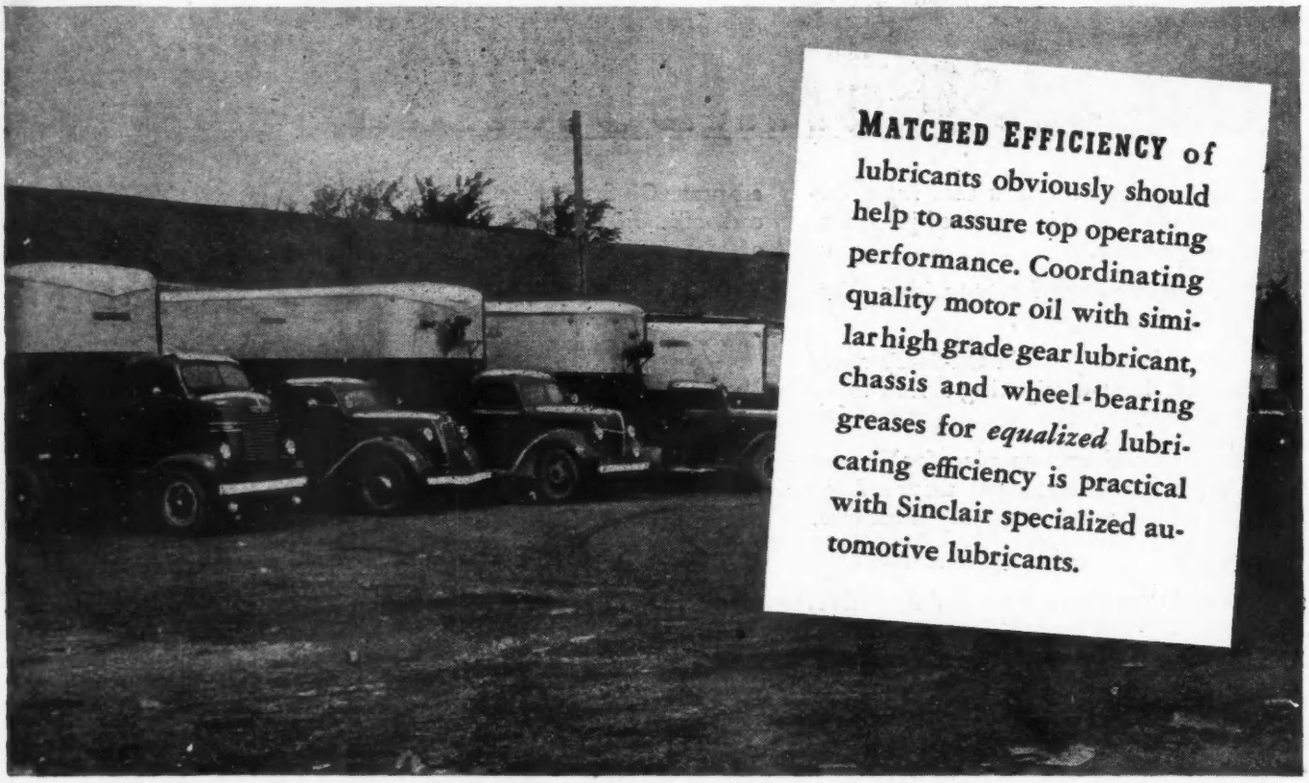
Write for information!

WAUSAU MOTOR PARTS COMPANY, 2400 Harrison Street, Wausau, Wisconsin



SINCLAIR MATCHED LUBRICANTS

for Top Operating Efficiency



SINCLAIR OPALINE* MOTOR OIL offers positive engine lubrication, free acting rings, resistance to carbon deposit and crankcase accumulations, avoidance of bearing corrosion . . . OPALINE GEAR LUBRICANT provides extreme pressure lubricating protection to prevent galling and scuffing, resists oxidation under operating temperatures, and is free flowing under Winter conditions . . . OPALINE CHASSIS LUBRICANT has "staying" properties and built-in extreme pressure characteristics . . . and for wheel bearings SINCOLUBE is designed to meet service temperature and pressure requirements, also keep an adequate lubricating film on balls and rollers, with freedom from leakage to brake linings and hubs.

• • •

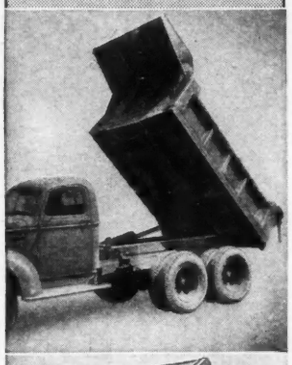
Try these matched lubricants for top operating efficiency and economy. *Reg. U. S. Pat. Off.

SINCLAIR LUBRICANTS-FUELS

FOR FULL INFORMATION OR LUBRICATION COUNSEL WRITE SINCLAIR REFINING COMPANY, 630 FIFTH AVENUE, NEW YORK 20, N. Y.

Anthony HAS IT...

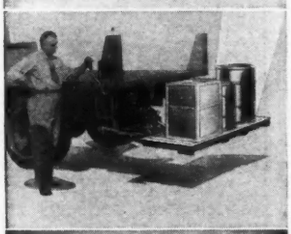
CONSTRUCTION EQUIPMENT THAT KEEPS TRUCKS ON THE MOVE



• ANTHONY "SUPER" HYDRAULIC HOISTS AND BODIES, up to 30 ton capacity—with "power speed lift" and "rubber restraining blocks," two of many features that explain the evident preference for Anthony equipment on the job.



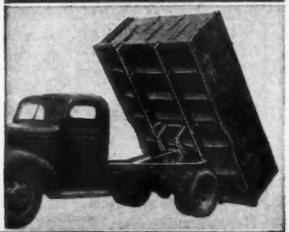
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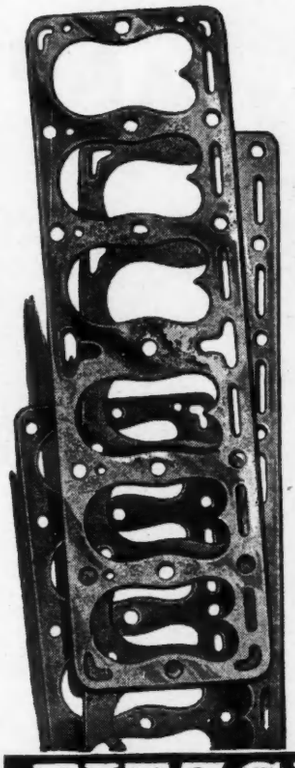
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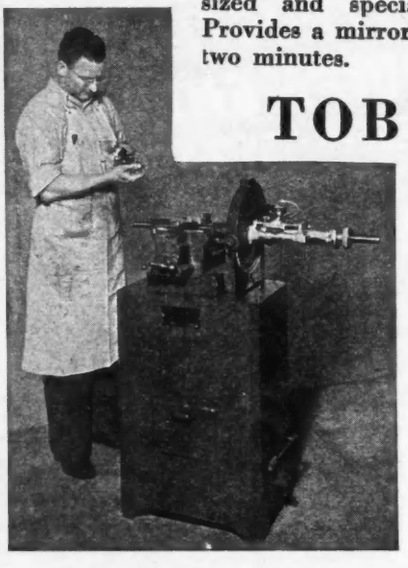
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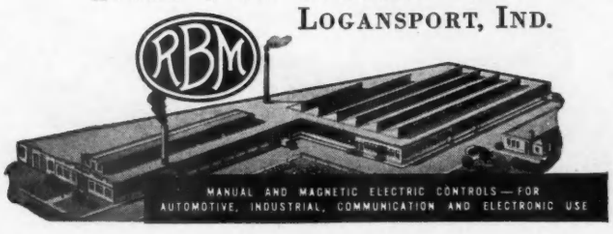
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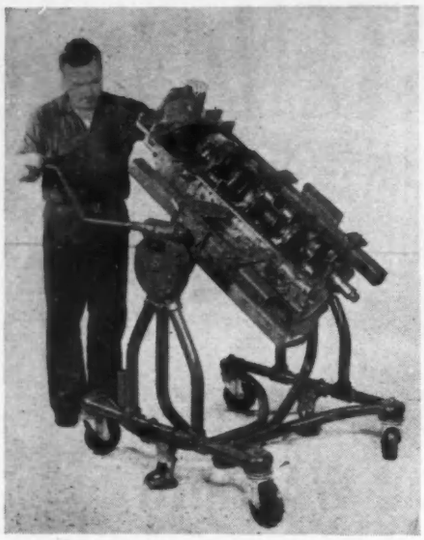
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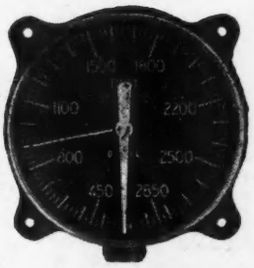


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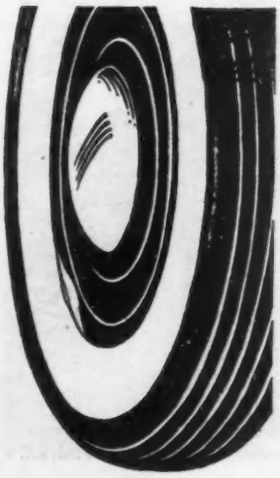
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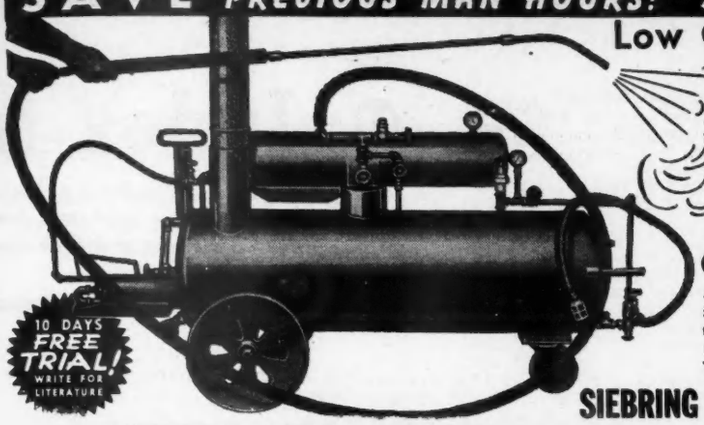
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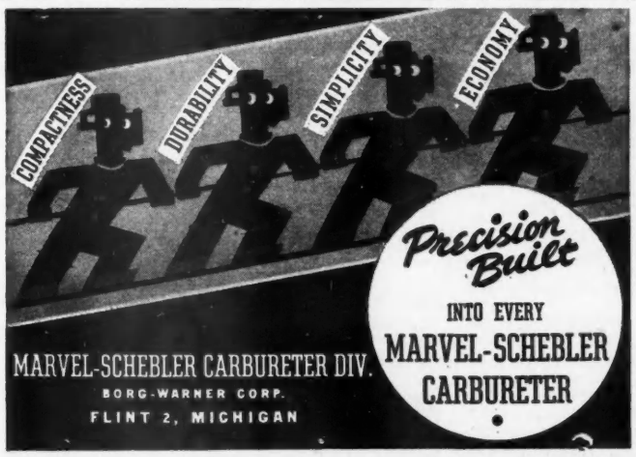
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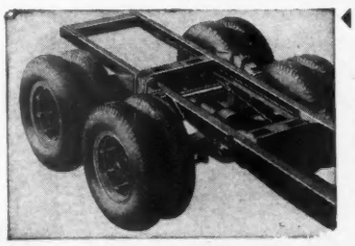
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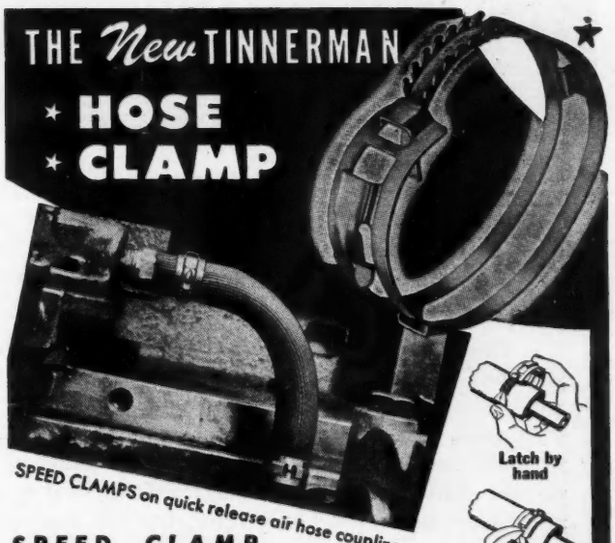
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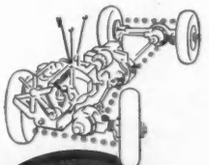
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